

TECHNOLOGY DEPARTMENT

AMERICAN

MARCH • 1958

Vegetable Grower

and MARKET GROWERS JOURNAL

STACK

SPECIAL REPORT ON SNAP BEANS

441-270
TOLEDO PUBLIC LIBRARY
385 MICHIGAN ST
TOLEDO 2 OHIO

Latest on Plastic Mulch • Plant Growing • Soil

"WE'RE FOR FIRESTONES 100% ...HAVE BEEN SINCE 1929"



Here Bruce Lackey (right), Firestone tire expert in Phoenix, and Mr. Libby discuss the famous tread design that makes Firestones take hold like no other tires.

... says Scott L. Libby, General Manager, Waddell Ranch Co., Waddell, Arizona

"Tractors, trucks and cars—it's Firestone tires on our ranch, all across the board," Mr. Libby reports. "That's the way we like it and that's the way we'll keep it. After all, it's only common sense to stay with products that consistently produce for you like Firestones.

"With Firestones on our tractors, we know we can count on both extra traction and exceptional wear. Lots of tire makes have been tried around this part of Arizona. We've never heard of any tire that can do the work or stand up to our abrasive sandy loam like Firestones—especially in summer heat. We use Firestones 100%."

Make it a point to contact your Firestone Dealer or Store this week. That's the place to go for all your tire needs. And while you're there, get full facts about Firestone's free loaner service. Should you ever require it, your Firestone Dealer or Store will gladly loan you brand-new Firestones to use while your tires are being repaired or retreaded.

ALWAYS A YEAR TO PAY

Firestone

BETTER RUBBER FROM START TO FINISH

Enjoy the Voice of Firestone on ABC television every Monday evening.

Copyright 1958, The Firestone Tire & Rubber Company

Bacterial
Yields inc
(tomato)

(Start s
solution
sprayin
is set. C

Bacterial E
Yields incr
control

(Apply
two-lea
days fo
er grow

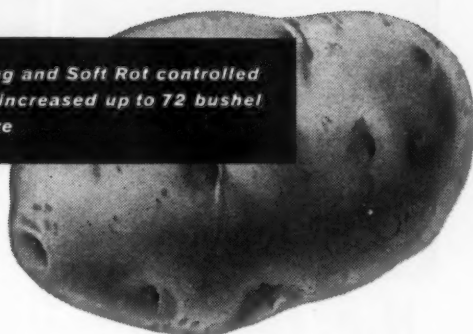
These results
ment station t
growers—sho
harvest time
the small cost
ings against d
The bigger
treated plots
Larger fruit, v
ring or cracki
pound.
Give your
double protect

Bacterial Spot controlled
Yields increased up to 50%
(tomato) 67% (peppers)



(Start spraying seedlings in seed beds with 200 ppm solution when first true leaves appear, and continue spraying plants in the field every fifth day until fruit is set. Gives prolonged disease-fighting protection.)

Blackleg and Soft Rot controlled
Yields increased up to 72 bushel
per acre



(Soak cut seed pieces in 100 ppm solution for one minute. Completely compatible with the fungicide of your choice and used in combination controls both fungal and bacterial diseases in one treatment.)

Bacterial Blight controlled
Yields increased through disease
control



(Apply 200 ppm spray solution when seedlings are in two-leaf stage. Continue spray applications every five days for disease-free seedlings that develop into faster growing, heavier rooted, better foliated plants.)

Angular Leaf Spot controlled
Produce high-quality disease-free
fruit for premium prices



(Apply 200 ppm solution to plants after emergence in the field. Continue spraying at five day intervals until fruit sets. For curative action, spray at 400 ppm for three applications at five day intervals.)

Agri-mycin® 100 controls disease, increases yields!

These results—from controlled experiment station tests made with cooperating growers—show how the extra yield at harvest time can pay many times over the small cost of protecting your plantings against disease outbreaks.

The bigger yield from Agri-mycin-treated plots is also of better quality. Larger fruit, with far less spotting, scarring or cracking brings a high price per pound.

Give your vegetable plantings the double protection of Agri-mycin (the only

spray containing both streptomycin and Terramycin®). The disease-fighting antibiotics in Agri-mycin give prolonged protection because they are absorbed into the leaves and stems instead of being washed off by the first rain. The disease-free seedlings develop into faster growing, heavier rooted, better foliated plants that can bear a bigger crop.

Agri-mycin 100 is now available from leading suppliers of agricultural chemicals.

For control of Bacterial Spot of Tomatoes and Peppers; Blackleg and Soft Rot of Potatoes; Bacterial Blight of Celery; Angular Leaf Spot of Cucumber

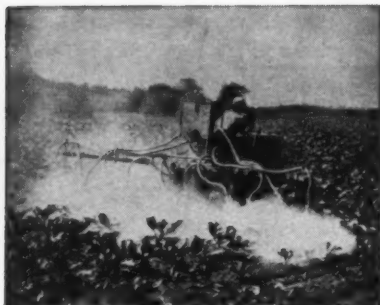
Pfizer

Chas. Pfizer & Co., Inc.
Brooklyn 6, New York
World's largest producer of antibiotics

*TERRAMYCIN BRAND OF OXYTETRAOCYCLES



9.34-oz. bottle makes 50-100 gallons of spray. Economy-size 26-lb. drum makes 2,125 to 4,250 gallons of spray.



New, Low Cost Bean-Niagara Cropmaster

ROW CROP DUSTER

*gives efficient, economical,
thorough crop protection
with these BIG features:*

Rugged, rigid, welded steel, reinforced construction • Powerful 12" fan driven by high speed engine • Box-type fan runner construction reduces air friction, increases efficiency • Convenient, positive feed control operated from tractor seat • Variable wheel tread adjustment • Quick, easy boom and nozzle height adjustments • Available in either tractor mounting or as a trailer unit with 8 or 12 nozzle booms • Alemite lubrication system — designed for easy servicing

**NEW BEAN-NIAGARA
110 Series Dusters**



For big capacity, uniform dust distribution, faster coverage—up to 200 lb. hopper capacity • Tractor power take off driven • Available in either tractor mounting or as a trailer unit with 12 or 16 nozzle booms • Adjustable dust output • Powerful 17", six-blade fan • Adjustable tread width, and high clearance axle

SEE YOUR JOHN BEAN DEALER

Write today for more details



John BEAN

LANSING 4, MICH. SAN JOSE 1, CALIF.
Division of Food Machinery and
Chemical Corporation

American Vegetable Grower

Reg. U.S. Pat. Off.
Commercial Vegetable Grower
Market Growers Journal

VOL. 6

No. 3

MARCH, 1958

Cover photograph by Jerome
Wexler.

FEATURES

- Be First . . . with Seedless!** 11
By E. C. Stevenson
- Plant Growing** 12
By Eldon S. Banta
- Special Report on Snap Beans** 13
By Paul Work
- Raise Your Yields with Black Plastic Mulch** 16
By Robert L. Carolus
- Is Your Transplanter Operating Efficiently?** 24
By Robert H. Powell
- Row-Type Fumigator** 30
By G. F. Warren
- Use Starter Solutions** 38
By L. G. Jones
- Atomic Age Harvesting** 42
By William Stempfle
- Successful Program for Tomatoes** 49

DEPARTMENTS

- | | |
|-------------------------------------|-----------------------------------|
| Letters to the Editor..... 6 | Potatoes..... 46 |
| State News..... 18 | State News Special Report..... 48 |
| Know Your Vegetable Seeds..... 18 | New For You..... 55 |
| Calendar of Coming Meetings..... 21 | Answering Your Questions..... 59 |
| As It Looks To Me..... 36 | Editorials..... 60 |
| Greenhouse Crops..... 43 | Coming Next Month..... 60 |

E. G. K. MEISTER, Publisher
RICHARD T. MEISTER, Editor

Managing Editor, E. K. GOULD. Associate Editors: H. B. TUKEY, ELTON S. BANTA.
Consulting Editors: R. L. CAROLUS, M. P. RASMUSSEN, JOHN CAREW, PAUL WORK.
Art Director, GEORGE M. ROSS. Production Manager, J. S. BENDER.

EDWARD L. MEISTER, Director of Advertising
District Advertising Offices

NEW YORK: W. J. Martin and Company,
185 Madison Ave. Phone—Murray Hill
3-2865.

SAN FRANCISCO: McDonald-Thompson,
625 Market St. Phone—Yukon 6-0647.

NEW JERSEY: W. J. Martin and Company,
612 Bernita St., Riverdale (Westwood
P.O.). Phone—Parkridge 6-1595.

LOS ANGELES: McDonald-Thompson, 3727
West 6th St. Phone—Dunkirk 7-5371.

CHICAGO: Peck and Billingslea, Inc., 185 N.
Wabash. Phone—Dearborn 2-0292.

SEATTLE: McDonald-Thompson, 1008 West-
ern Ave. Phone—Eliot 3767.

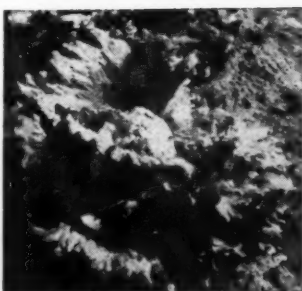
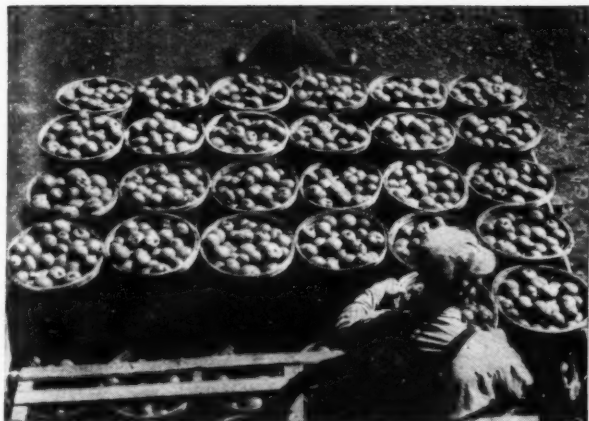
AMERICAN VEGETABLE GROWER is published by American Fruit Grower Publishing Co., Willoughby, Ohio. E. G. K. Meister, Publisher and Chairman of the Board; Edward L. Meister, President; Richard T. Meister, General Manager; Gilbert Meister, Vice-President. Subscription price \$1.00 per year in U.S. and possessions; to Canada and other foreign countries \$1.50. Single current copies 25c; copies over one year old 75c.

When changing your address, please send us old as well as new; send address label from your last copy; allow 5 weeks for the first copy to reach your new address.

Postmaster: Please send change of address "Form 3579" to AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

AMERICAN VEGETABLE GROWER

Loaded WITH GROW POWER!



**SEE YOUR
FERTILIZER DEALER
NOW....**

FOR VEGETABLES there's nothing like UREA 45 to make easy, efficient work of nitrogen application to produce big yields. You get 36 pounds of actual nitrogen in every 80-pound bag of **ARCADIAN® UREA 45**. And it's all high-quality urea nitrogen, quick-acting, long-lasting and leach-resistant. The firm, free-flowing pellets are easy to apply in any equipment. UREA 45 is ideal to add to irrigation water, so water can do the work of fertilizing. Any way you use it, **ARCADIAN UREA 45** is a labor-saver and a profit-maker. Get **ARCADIAN UREA 45** today.

NITROGEN DIVISION New York 6, N. Y. • Hopewell, Va. • Ironton, O.
Raleigh, N. C. • Indianapolis 20, Ind. • Omaha 7, Neb. • Kalamazoo, Mich. • St. Paul 4, Minn.
Columbia, Mo. • Columbia 1, S. C. • Atlanta 3, Ga. • San Francisco 4, Cal. • Memphis 9, Tenn.



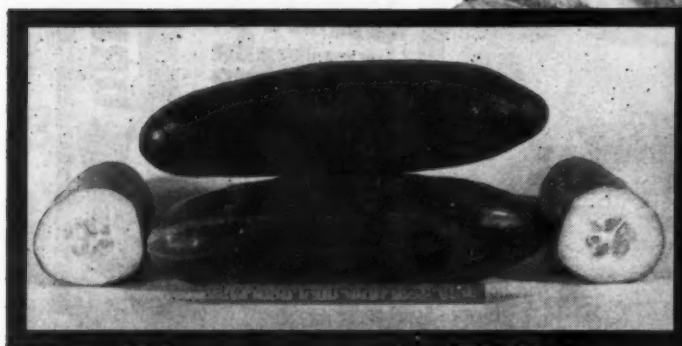
Grow with **Arcadian UREA 45**

Entered as second class matter at Post Office at Willoughby, Ohio, under the Act of March 3, 1879. Additional entry at Mount Morris, Illinois.

MARCH, 1954

Robinson specialized vine-seeds

Better...



ASHLEY, one of the most widely used slicing cucumbers on the market today, is a vigorous producer. And its choice seed is bred, of course, by Robinson

because we Specialize!

Reflecting a near century of intense specialization by the Robinson family, our cantaloupe, watermelon, cucumber, squash and pumpkin seeds meet the specific requirements of your area. Look to Robinson specialized vine-seeds for your most profitable crops.

Ask your dealer about Robinson specialized vine-seeds.



FREE!

Sample package of Robinson specialized vine-seed and subscription to Robinson monthly newsletter! Prove to yourself that our quality vine-seeds are better because we specialize. Mail this coupon today.

Name _____
Address _____
City _____ State _____

LETTERS TO THE EDITOR

The Spud and the Sputnik

Dear Editor:

Your January issue contained one article, "The Spud and the Sputnik," which should be put before all America. It is good.

"A Soil Test Can Save You Money" is also revealing.

Could I get reprints of these articles or another copy of this issue?

Salt Lake City, Utah David E. Lofgren

We are sending Reader Lofgren an extra copy with our compliments.—Ed.

Comments From Israel

Dear Editor:

The problems we face here are dissimilar to the problems of American vegetable growers in that our production costs are very high due to an abnormal price structure of materials.

I am particularly interested in growing early crops but the cost of plastic in this country is almost prohibitive. Are there other materials that could be used for frost protection in the field?

Irrigation does not solve the complete problem as we also suffer from monsoon winds and hail and, therefore, require some protective covering in the field. Our plants are transplanted in compost pots from cold frames.

This whole process is in an experimental stage here but you people have already devised various methods to beat the market. If you could suggest some sources of reference with regard to this subject, we would be thankful.

I would like to take this opportunity to state that we find your magazine extremely helpful and stimulating. New ideas, methods, and equipment, of which we know nothing, show us the way to experimentation under our own specific conditions.

Western Galilee, Israel M. Duvdani

We are sending Reader Duvdani a tear sheet from our July Buyer's Guide issue listing manufacturers of paper plant protectors and also tear sheets of the articles, "12 Tips To Help You Beat the Market" (March, '57), and "Don't Gamble With Frosts" (April, '57).—Ed.

Dry Land Cress

Dear Editor:

In reading the "Letters to the Editor" in your November, 1957, issue, I was interested in A. Elliot Williams' letter about dry land cress. Any information you might have about this crop would be greatly appreciated.

Clemson, S. C.

E. Evan Brown

We are sending Reader Brown the report of the dry land cress harvest in East Tennessee.—Ed.

Why Reader Likes AVG

Dear Editor:

I like AMERICAN VEGETABLE GROWER for its valuable information on:

New ideas.
New varieties.
New plant covers and supports.
New insecticides and fungicides and where they can be obtained.

Hamersville, Ohio

T. George Lucas

AMERICAN VEGETABLE GROWER

MARCH, 1958

the article,
which should
"money" is
articles or
Lofgren
an extra

issimilar
vegetable
costs are
ce struc-

growing
in this
are there
for frost

complete
monsoon
are some
or plants
from cold

perimental
already
the mar-
tures of
ject, we

unity to
extremely
s, meth-
e know
rimenta-
ons.

uvdvan
i a tear
de issue
nt pro-
articles,
Market"
e With

Editor"
was in-
er about
u might
greatly

Brown
the re-
in East

WER for

es and

Lucas

OWER



Tailor-Made for Vegetables!

New Agricultural Grade

Grace Crystal Urea

Fertilizer Compound

low biuret

(Less than 0.2%)

and completely water soluble!

1. Safe! Especially Formulated for Foliar Application.
2. Makes Possible Maximum Yields and Top Quality.
3. Saves Time, Labor, Equipment.

The low biuret content of new Grace Crystal Urea gives you concentrated nitrogen (46%) that's completely safe for foliar application.

The nitrogen in Grace Crystal Urea is immediately available to plants, and the nitrogen goes to work almost at once. Supplying this extra nitrogen in this easy way gives you maximum yields and top quality.

Response in terms of improved foliage, color or growth may be seen within a few days after spraying. Even when

soil conditions are poor—for example, when there is excessive dryness, wetness, cold, or leaching from heavy rains—response from foliar feeding with Grace Crystal Urea is good—and fast.

Grace Crystal Urea can be added to your regular insecticides or fungicide formulations and sprayed at the same time you apply these materials. You do two jobs at once, which frees men and equipment for other work.

Grace Crystal Urea is compatible with commonly used spray materials. The crystals dissolve readily and completely, won't clog spray hoses, valves or nozzles. Solutions of Grace Crystal Urea are non-corrosive—won't harm rubber, metal or wood.

FOR SOIL APPLICATION use free-flowing Grace Urea Prilla. Guaranteed 45% Nitrogen. Ideal for Top-Dressing or Side-Dressing of fruits and vegetables, as well as field crops.

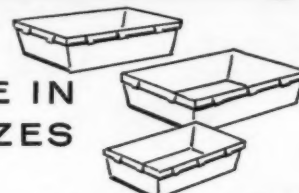
Grace Chemical Company A Division of W. R. Grace & Co.

MEMPHIS, TENNESSEE

How to turn one sale into a dozen

with **BIRD GRO-TAINERS**

**NOW
AVAILABLE IN
THREE SIZES**



Plants sell like magic . . . by the dozen . . . in Bird Gro-Tainers. And you now have three sizes to care for all your needs in seedling flats. You not only sell more plants but better plants because you avoid root damage which takes place when individual plants are cut from large flats.

Just look at these many advantages: Bird Gro-Tainers are molded from hard durable fibre. They're sturdy and rigid. Flange around top provides extra strength, permits easy handling. Unlike wood or plastic, the sidewalls breathe, allowing aeration and reducing the chance of waterlogging in wet weather. Drainage holes in bottom also prevent waterlogging. Tapered sides cut down quantity of soil required without sacrificing top spacing. Bird Gro-Tainers are available for immediate delivery — and they nest snugly for storage in small areas. And the harmonizing green color is attractive — yet inconspicuous to show off plants to best advantage.

If you wish, Bird Gro-Tainers may be used with Bird Vita-Bands. No. 2 size holds six 2 inch Vita-Bands; No. 3 holds twelve 1 3/4 inch Vita-Bands; No. 4 holds twelve 2 inch Vita-Bands.

Order now from your distributor — or send coupon for complete information about this and other Bird Containers.

Size	Bottom Dimension	Height	Top Dimension	Quantity Per Case	Gross Wt. (lbs) Per Case	List Price Per Thousand
#2	6" x 4"	2 1/2"	7 3/16" x 5 3/16"	200	22	\$44.00
#3	7" x 5 1/4"	2 1/2"	8 3/8" x 6 1/8"	200	28	\$58.00
#4	8" x 6"	2 1/2"	9 1/4" x 7 1/4"	200	37	\$68.50

See your distributor for delivered prices

Bird Peat Pots for free root penetration. **Bird Vita-Bands**, the nutrient-treated plant bands. **Bird Perennial Pots** for longer selling season. **Bird Vita-Green Pots** for small plant retail sales. **Bird Gro-Tainer Flats** for volume sales.



Profits grow like magic in Bird containers

Makers of Quality Products since 1795
Linoleum, Vinyl Floor Coverings, Vinyl Wall & Counter Coverings; Asphalt Roofing, Insulated Sidings; Fibre & Paper Boxes; Railroad Tie Pads; Horticultural Products



Bird & Son, Inc., Dept. AVG
East Walpole, Massachusetts

Please send me free literature, including prices and growing instructions, on the following:
(Check items on which you want information.)

- ☐ Peat Pots ☐ Perennial Pots ☐ Gro-Tainer
☐ Vita-Bands ☐ Vita-Green Pots

Name.....

Street & No.....

City & State.....

AMERICAN VEGETABLE GROWER

en

S

7

Gro-
your
s but
takes
s.
ainers
r and
rmits
walls
ce of
n also
ity of
Gro-
they
izing
w off

Bird
No. 3
lve 2

n for
iners.

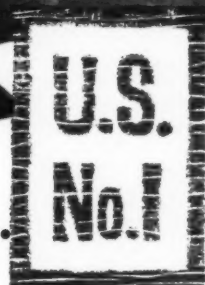
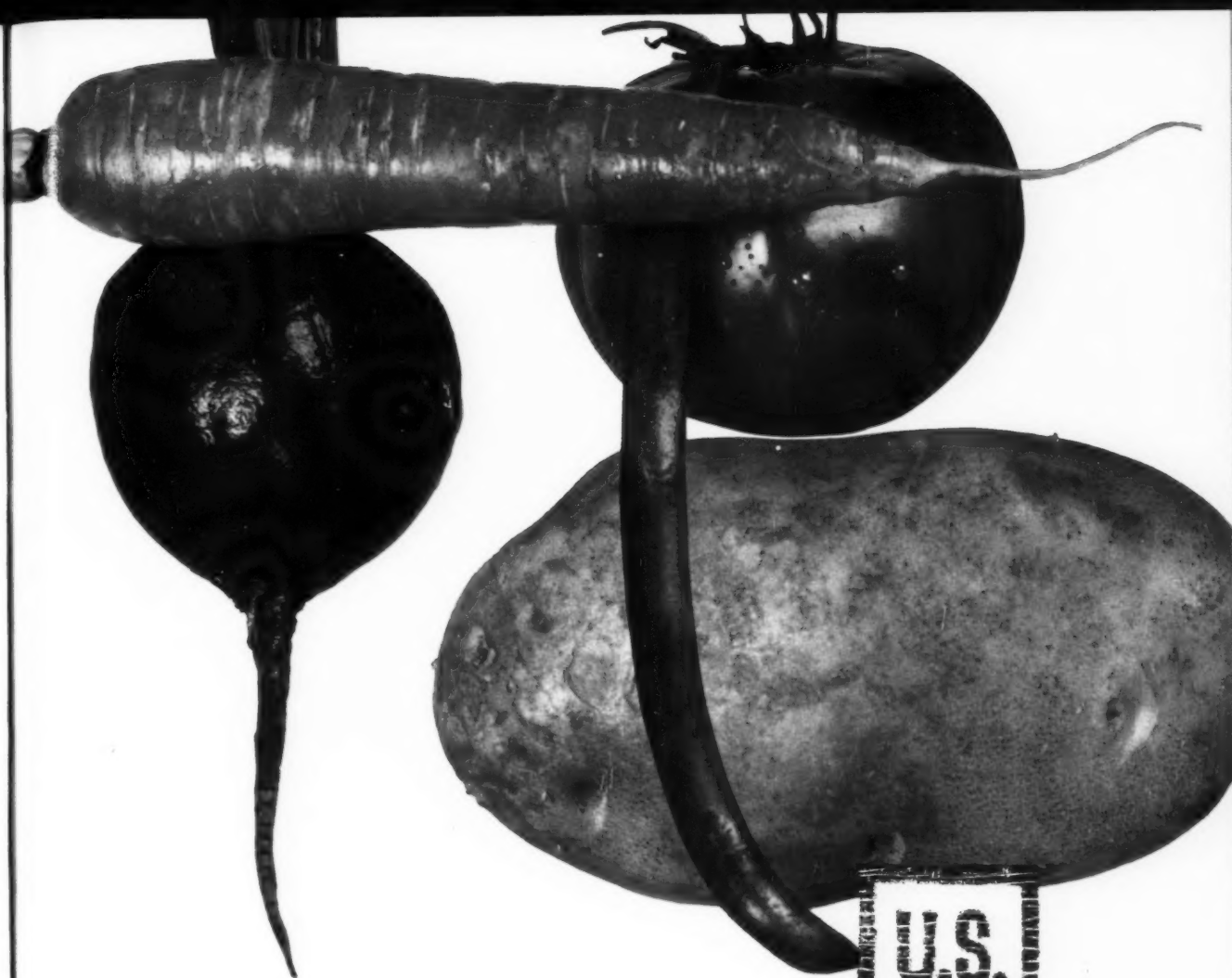
Price per usand
1.00
1.00
1.50

eated
-Gren
s.

ing

ner

GROWER



Here's how you can grow more....

Pack new color, new firmness, new quality into your vegetables.

Grow for U.S. No. 1 grade with mixed fertilizer containing **K-plus** sulphate of potash. Vegetables pack in extra nutrients with the help of **K-plus** sulphate of potash. Where other forms of potash add chloride, **K-plus** supplies sulphate plant food. Excessive chloride adds water to the vegetables and may inhibit nutrient uptake, while sulphur or sulphate is essential for plant growth. That's why **K-plus**—the quality sulphate form of potash—helps you grow high yields of quality vegetables. With **K-plus**, you can expect more vegetables to respond with yields of the flavor, color, and size that grade U.S. No. 1. Plants can be healthy, vegetables more firm. Vegetables can hold quality better during storage and shipping. Ask your dealer for mixed fertilizer with **K-plus** sulphate of potash.



* TRADE-MARK—I. M. C. BRAND OF SULPHATE OF POTASH

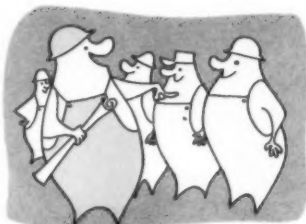
see how **K-plus** goes to work for you



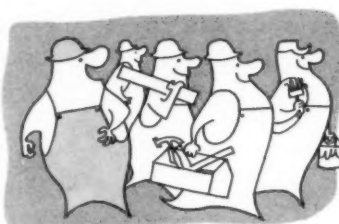
HERE'S HOW



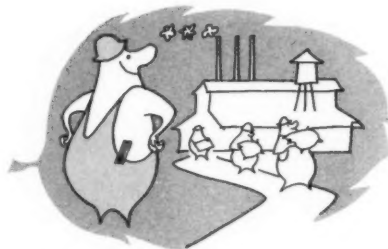
BUILDS HIGH QUALITY VEGETABLES



Like a good foreman on any building job, **K-plus** potash supervises other nutrient elements . . . performs the function of a catalyst.



This results in a nutrient production team fully equipped to grow quality vegetables for top market prices—without excess chloride.

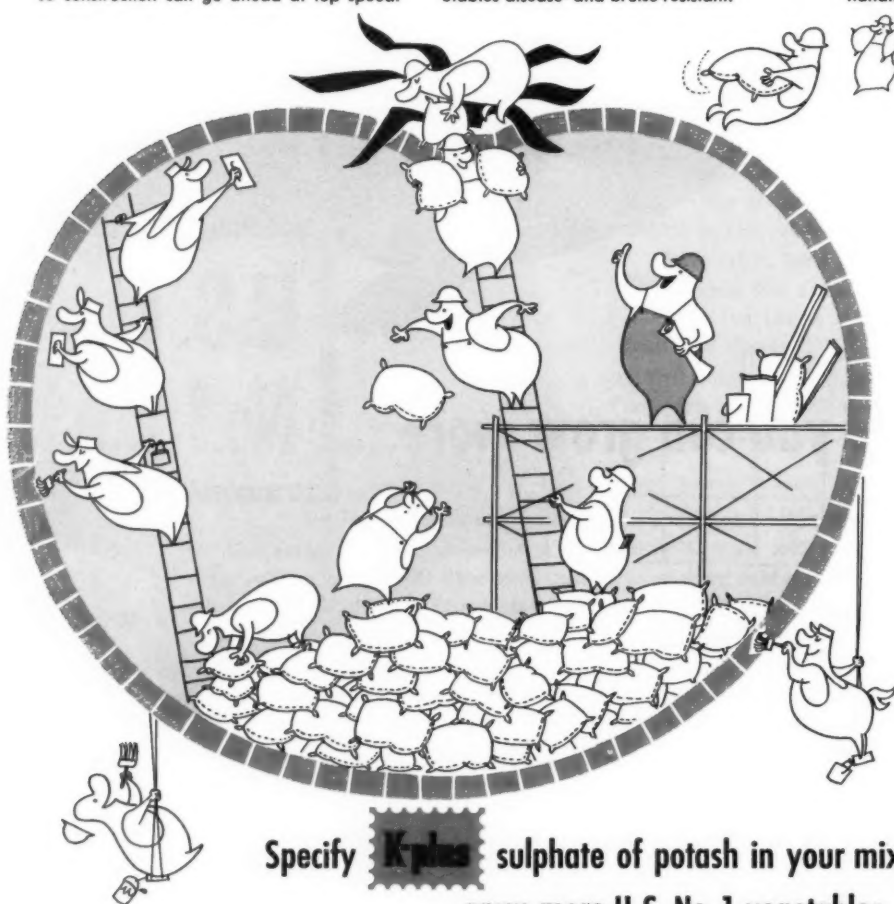


The production team moves quickly to food factories in plant leaves, begins making sugar, proteins, vitamins, enzymes, and cellulose.

Then **K-plus** sulphate of potash helps rush carbohydrate raw materials to fruit or root, so construction can go ahead at top speed.

Healthy skin and storage tissue, nourished by the nutrient production team, help make vegetables disease- and bruise-resistant.

Cellulose is packed in for crispness, smooth and even texture, and strength to resist rough handling in shipment to market.



Those extra carbohydrates and proteins—made with the help of **K-plus** sulphate of potash—are packed tightly into vegetables for U.S. No. 1 flavor.

And vitamins and enzymes, made with **K-plus** help, are added too. All these help give you more vegetables that grade U.S. No. 1.

Finally, top grade color can come naturally to healthy vegetables, packed full of the important plant nutrients which **K-plus** sulphate of potash helps supply.

Specify **K-plus** sulphate of potash in your mixed fertilizer . . .
grow more U.S. No. 1 vegetables

INTERNATIONAL MINERALS *International* MINERALS & CHEMICAL CORPORATION
POTASH DIVISION . . . 20 N. WACKER DRIVE, CHICAGO 6, ILL.

Be

Se
ac

By

WATER
cially
stands, sh
seedless (t
thing diff
Seedless
hybrids th
seeds. Th
are produ
watermelo
altered by
ous drug c
from this
plants wh
pollen fro
seedless m
Seed is
can seed
bulk of it
In seedl
tary seed
are small,
developed
right alon
melon. O
found wit
oped seed
true seeds
good seed
Purdue
ing Japan
seedless m
tion to car



Band is remo
"ball" to san
Care must be

MARCH, 195

Be FIRST ...with SEEDLESS!

Seedless watermelons are new and consumer acceptance good. Here's how you grow them

By E. C. STEVENSON
Purdue University

WATERMELON growers, especially those with roadside stands, should take a careful look at seedless (triploid) melons for something different for their trade.

Seedless watermelons are sterile hybrids that develop fruits, but no seeds. The seeds for growing them are produced by crossing a normal watermelon with one that has been altered by treating it with a poisonous drug called colchicine. The seed from this cross produces seedless plants which, when pollinated with pollen from normal plants, produce seedless melons.

Seed is available through American seed houses even though the bulk of it is produced in Japan.

In seedless watermelons rudimentary seed structures develop. These are small, soft, white, tasteless, undeveloped seed coats and are eaten right along with the flesh of the melon. Occasionally a melon will be found with true seeds or fully-developed seed coats that appear to be true seeds, but these are rare from good seed stocks.

Purdue University has been testing Japanese-introduced varieties of seedless melons since 1951, in addition to carrying on a program to de-

velop wilt-resistant seedless melons using American varieties.

Seedless melons are adapted anywhere that regular varieties will grow. Sandy soils are best, but satisfactory crops can be grown on good loam soils.

Direct field seeding of seedless watermelons is usually not practical for two reasons: 1) the seed cost is high and 2) the soil temperature must be warm for good germination.

Most Indiana growers start their watermelon and muskmelon plants in hotbeds as a regular practice. It is usually advantageous, but not absolutely necessary, to pre-sprout the seed between layers of moistened paper toweling, in moist vermiculite, or in sand.

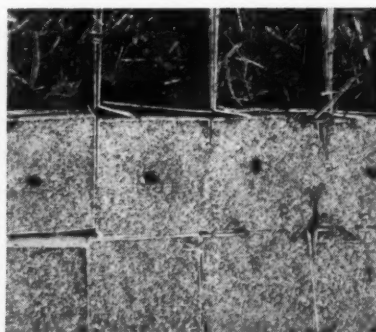
As soon as the seed sprouts, it should be transferred to plant bands in the hotbed. The bands should be almost filled with well-rotted



Triploids sell at a premium at roadside markets. Here a young customer buys a seedless melon at stand of Gail Williams, Carmi, Ill.



Band is removed and soil filled in about root "ball" to same height as sand on top of band. Care must be taken not to break root "ball."



Top row of plant bands with manure tamped into them. Seeds are placed on sand in the middle row; seeds are covered in bottom row.

manure; the sprouted seeds are placed in a layer of sand on top of the manure. The temperature in the bed should be maintained at approximately 85° F. until the seedlings have emerged; usually this requires about 48 to 72 hours.

As soon as the sprouts have emerged, the temperature should be reduced to prevent rapid growth and spindly seedlings. The beds should be watered enough to prevent wilting, but not over-watered.

(Continued on page 50)

An important part of a three-phase production program of Ohio's three Bettinger brothers is

PLANT GROWING

By ELDON S. BANTA

IN northwestern Ohio the Bettinger brothers, Leonard, Harold, and Kenneth, have built one of the finest plant growing businesses to be found anywhere. They have also developed a successful vegetable farm of some 400 acres of tomatoes, sweet corn, cabbage, cauliflower, broccoli, cucumbers, and melons. In addition, they have intensified their business by utilizing their buildings and packaging equipment to package fruits and vegetables for large chain stores.

All along the production line the Bettinger brothers have kept two watchwords uppermost: efficiency and quality. Their objective is to produce the highest quality product, a flower plant, a ton of tomatoes, or a bag of onions, whatever it is, and to produce it as economically as possible.

The plant growing business on Bettinger Farms is young, as is their entire vegetable growing operation, having been developed since 1944.

The propagation of vegetable and flower plants is largely under the direction of Leonard, with Harold assisting and in charge of sales. Kenneth directs the packaging operation, and all three work out the management of the field vegetables.

About 80,000 flats of plants are grown every spring, with about 25,000 of these being tomatoes.

Of first importance are the plants to be set on the Bettingers' own acres. In fact, this is how they got into the plant propagation business. The need



Above: Section of 2800 hotbed sash and four plastic greenhouses on Bettinger farms; there are also glass houses for plant propagation.



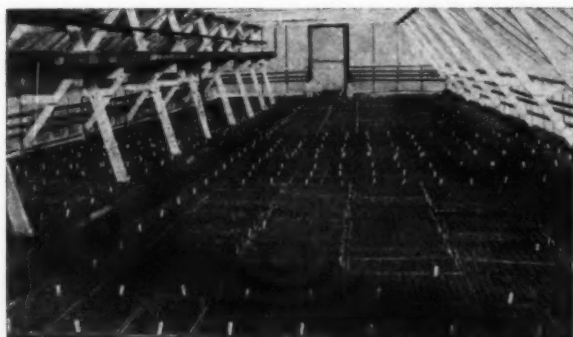
Above: Leonard shows plants grown in quart baskets and sold wholesale; baskets are treated with copper carbamate to prevent decay.

of many thousands of plants for their own field operations opened the way for the brothers to build greenhouses and hotbeds.

Realizing that a large sized business is often more profitable than a small one, the Bettingers explored the field of commercial plant production. The great need for healthy, hardy, and suitable varieties of tomato plants for the canning trade in northwestern Ohio stimulated their adventure. In 1956, after careful consideration, the Bettinger brothers decided to expand again and add flower plants to their list of vegetable plants being grown.

Against this background of development must be considered the methods used in plant growing to make

(Continued on page 52)



Flats of tomato plants in plastic greenhouse. Plants are stockier under plastic than under glass. Note flats on shelves at side.



Flat carrier is built so it can be driven right down between rows of hotbeds, and flats of plants quickly transferred to the hotbed.

AMERICAN VEGETABLE GROWER

THE s
States
only by
and lettuce
Three of
processing

This a
beans. Pe
cussed at

The gr
from 191
rapid inc
fresh ma
time, acre
was mult
by 3½;
value, 5 t
processing
duction,
double; c

In 195
ers \$86 m
evenly d
processed
tonnage
market b

Florida
state, wit
followed
and No
grows its
age and
els), ag
York's \$
Season o
in these

The be
petitive.
with fres
frozen po
Florida p
MARCH, 19

Special Report on . . .

SNAP BEANS

By PAUL WORK
Cornell University

THE snap bean in the United States is exceeded in dollar value only by the Irish potato, tomato, and lettuce. Next comes sweet corn. Three of these five are important for processing, with peas not far behind.

This article covers bush snap beans. Pole snap beans will be discussed at another time.

The growth of the bean business from 1918 to 1953 demonstrates the rapid increase of processed over fresh market beans. During this time, acreage of fresh market beans was multiplied by 4 and production by $3\frac{1}{2}$; prices rose 50%; dollar value, 5 times. Acreage of beans for processing increased 6 times; production, 6 times; price, nearly double; dollar value, 12 times.

In 1957 snap beans yielded growers \$86 million. This figure is about evenly divided between fresh and processed. Processing acreage and tonnage are higher than for fresh market beans.

Florida is the largest fresh bean state, with nearly \$16 million worth; followed by California, New York, and North Carolina. California grows its fresh beans on small acreage and gets \$12 a cwt ($3\frac{1}{3}$ bushels), against Florida's \$10, New York's \$8, and North Carolina's \$6. Season of maturity is likely a factor in these differences.

The bean business is highly competitive. Processed beans compete with fresh. The Oregon canned or frozen pole bean competes with the Florida processed product, in spite

of a big freight differential. Returns have been reduced so that only the good grower can make money, and then only if he bargains well and does a "bang-up" job.

Before beginning, the prospective grower must size up his situation.

If he is to sell to a processor, is there one conveniently located, well managed, successful, and fair-dealing? If selling to the fresh market, is there a good crop or dealer outlet that will handle the product to the grower's advantage?

Is there opportunity to build a business with chains or stores, which demand steady, dependable service as well as a quality product well packed? There are also possibilities in prepack and at roadside.

Are land and climate suitable? Is a dependable picking force available? Is irrigation necessary? If so, is the grower prepared to manage it on a year-in year-out basis?

In bargaining, the grower should be clear concerning his share of costs with the canner or dealer. At King Ferry, New York, co-operative, the return to growers last year was about \$2 per cwt, but that was after most cash costs had been met by the co-op. The \$12 per cwt California growers receive may not be as good if their costs are high.

Oregon leads the processing field in dollar value, \$11.5 million. New York follows with \$7.5 million, but with $3\frac{1}{2}$ times the acreage of Oregon. California, Wisconsin, and Florida follow in the \$3 million class. Average processing prices vary less widely than fresh prices—\$106 to \$132 a ton.

In 1957 California realized an

average of 130 cwt per acre for fresh snap beans and, along with Oregon, 8 tons per acre for processing. In other states, yields of fresh beans range from 20 to 50 cwt per acre; for processing, 1.5 to 2.7 tons per acre.

The bush snap bean belongs to the genus *Phaseolus vulgaris* of the family *Leguminosae*. Like other legumes, the beans have the capacity, through the action of symbiotic bacteria of soil and plant, to gather nitrogen from the air. A crop may gather the equivalent of 100 to 200 pounds per acre of actual nitrogen, equivalent to 3 times as much ammonium nitrate.

Nutritionally, the snap bean is low in carbohydrates and proteins, intermediate to good in minerals and vitamins.

Soil and Climate.—The bean thrives on a wide variety of soils ranging from light to heavy and even muck or peat, as in California and Florida. It does well at pH ranges from 5.5 to 6.7.

It is unwise to plant beans on a large scale in fields not fairly uniform in soil type, fertility, and drainage because this will result in uneven maturity, which reduces harvesting efficiency and may even make a field unharvestable. If maturity at various times is desired, plant in separate beds or parts of fields with uniform soil for even and full harvest of each section at one or two pickings.

The bean will not tolerate freezing temperature in either spring or fall. At some risk, it may be planted at average date of last killing frost in spring since it may be five days to

SNAP BEANS

a week or more before seedlings break ground. In frost emergency, plants just coming up may be lightly covered with soil. In making late plantings for fall, remember that growth is slowed up in that season.

The bean rates between cool and warm season crops in temperature adjustment. It does not thrive in cold, wet weather even if there is no frost. It also is likely to lose blossoms in a hot period at blooming time.

Salinity and Minor Elements.—

Beans are highly sensitive to soil salinity and fertilizer injury. They are sensitive to soluble boron, aluminum, and manganese, especially in very acid soils. Mineral deficiencies are not commonly reported, although copper, manganese, zinc, or magnesium may be short in Florida.

Build-up of fusarium and other damping-off soil fungi present the chief obstacle to growing beans on the same ground for several years.

In general, the bean does not require heavy applications of fertilizer, although it is not wise to place too much dependence on the nitrogen-gathering resources of the plant, especially early in the season. Using a 4-16-4, C. B. Sayre, New York State Agricultural Experiment Station, Geneva, found little gain from 600 pounds per acre over 300 pounds. For example, the station recommends 300 to 400 pounds of 10-20-20, varying with conditions. Larger applications are made on sandy soils.

Since the bean is sensitive to injury from excess salts, band placement is almost universally practiced. This makes for economy with a quick-growing crop. Placement is usually in two bands 2 inches to the side and a little deeper than the

seed. In experiments at Virginia Truck Station, placement showed a gain of as much as 50% over broadcasting. In sandy soils, side-dressing with nitrogen is sometimes practiced.

Irrigation.—Beans grow quickly, often without irrigation. However, experiments have shown that an adequate moisture supply is especially important from blossom time onward, insuring a good set and

It is unwise to plant beans in land that is overrun with nut grass or quack grass. Broad-leaved weeds in a bean field may be successfully controlled with dinitro sprays, applied before plants break through the ground, following directions from the extension service or on the container. Some growers use the sprays at planting time. It is more economical to apply the material in a swath over the planted row.



Mechanical harvesting is increasing because of difficulty in obtaining hand labor. Photo shows bean picker with a pallet trailer. (Chisholm-Ryder Co., Inc., Niagara Falls, N. Y.)

good pod development in both yield and quality.

Darkening of foliage may indicate water need, and plants can recover fairly readily from early drought. Ground too wet at planting time favors seed rots. The Geneva station has experimental plots of several processing crops. Results so far show the importance of irrigation.

Varieties.—Differences in earliness among most bush varieties are hardly over a week, although there are a few late ones.

Stringless Black Valentine, an old variety, is still popular for fresh market. It has good shape and color, standing up well on the way to market.

Tendergreen, now over 32 years old, is a leader for processing and fresh market.

Bountiful, an old, flat-podded variety, is also popular for market and processing as shoestring and baby food.

Others being used to greater or less extent are **Slendergreen**, **King Green**, **Hyscore**, **Processor**, **Tenderlong**, **Tenderwhite**, **Corneli 14**.

Leading wax varieties are **Kinghorn** and **Cherokee**.

Getting a Good Stand.—Many experiments have shown that yield per acre increases with stands up to about 12 plants per foot, but not in

NEW YORK SNAP BEAN GROWERS ORGANIZE

The Tri-County Growers' Co-operative, Inc., has been formed by 25 central New York growers. The organization represents the largest acreage of snap beans of any co-op in the country, with about 12,000 acres under its control. This acreage includes both market and canning beans.

Main reasons behind formation of the group were to insure buyers of high quality produce and a steady supply. The beans will be inspected to assure quality and uniformity. The co-op will have a packing house where all market beans will be graded and packed.

Heading the officers is Fred Zweifel, Waterville, president, with Stuart Allen, Waterville, vice-president; Arthur A. Simmons, Cassville, treasurer; H. J. Evans, Georgetown, secretary. Listed as directors are Claude Hinman, Deansboro; Merk Webster, Clinton; Earl Clark, North Norwich; Fred Eaton, Hubbardsville; Ed Koury, Utica; Sam Sally, Waterville; and Ray Barnes, North Brookfield.

Broad-leaved
nitro sprays

Newer migran
N. Y., accom

the same p
plants pro
than crow
hinges on
in yield a
With n
tendency
per acre.
around si

MARCH, 19



Photo: John Staby

Broad-leaved weeds may be controlled by dilute sprays applied before plants are up.



Newer migrant worker quarters at King Ferry, N. Y., accommodate a total of 1200 workers.



Photo: J. C. Allen and Son

Migrant workers are often employed, especially for the first picking.

the same proportion. Widely spaced plants produce more beans per plant than crowded ones. Actual practice hinges on the balance between gain in yield and cost of seed.

With most vegetables today the tendency is toward more plants per acre. Recommendations range around six to eight plants per foot,

sowing 10 to 20% more seed per foot. Mechanical harvesting favors thicker stands.

Seed of the same variety will vary from year to year, place of growing, and other factors. To gain a desired stand it is necessary to take into account both size of seed and percentage of germination. Corneli Seed

Co. in their Descriptive Catalog of Vegetables No. 14 gives average counts per pound of current varieties ranging from 1000 to 1700. That makes a big difference in planter adjustment.

It is not always easy to know at what rate a planter is sowing. Speed of tractor as well as setting of the machine are contributing factors. A test can be made with the planter shoe raised over bare road, but this should be checked after actual operation begins. Some growers dig up samples of rows and count the seeds. This practice is laborious, but it pays. Covering blades may be moved aside for the test.

It also pays to keep notes on settings and stand after plants are up. With seed costing 22 to 35 cents a pound last year and plantings run-

ning 60 to 120 pounds per acre, the grower can afford to use care.

Depth of planting will be governed largely by soil, season, and moisture supply. In sandy soils plants will break through from greater depth (2 to 3 inches) where they are likely to find more moisture. In heavier soils, especially if cold or wet, shallower planting (1 to 2 inches) is required. Under average moisture conditions, Dr. J. D. Atkin, Geneva Station, suggests not deeper than $\frac{1}{2}$ to $\frac{3}{4}$ inch. This favors quick come-up and minimizes disease and insect damage. If soil is dry, plant deeper.

Bean seed is generally good for two to three years. Seed is large and heavy and is easily damaged in threshing and handling, especially when dry and brittle. Often damage is not visible on inspection. Some newer varieties, especially white-seeded ones, seem more susceptible to injury.

Associated Seed Growers in 1949 published a report of studies on the problem and they and other seedsmen have devised special equipment to forestall injury in handling. Dropping sacks even a foot or two, to say nothing of truck height, has

(Continued on page 53)



Transplants are set in slits cut in film.

Laying black plastic with a tractor-mounted mechanical applicator that unrolls, applies, stretches, and throws soil over edges of plastic is essential to insure a good job.

Raise Your Yield... USE BLACK PLASTIC

**Michigan grower increases yield from his melon crop
by over 200 bushels per acre with polyethylene**

By R. L. CAROLUS
Michigan State University

IN Michigan, Willard Wiltse, of Pinckney, calculated that black polyethylene mulch increased the yield from his Honey Rock crop by over 200 bushels per acre in 1957, and that he received up to \$4 per bushel.

Yield figures were compiled from small replicated areas of mulched and unmulched melons in his 4-acre planting, 95% of which was mulched. It shows that with his Honey Rock crop, the marketable yield was increased from 217 to 462 bushels per acre, and with the Burpee Hybrid crop, from 299 to 438 bushels per acre.

The figures also show that mulching the crop materially hastened its maturity. By August 25 when the Burpee Hybrid melons grown on uncovered soil had matured only 85 bushels of fruit per acre, the poly covered rows had produced 290 bushels per acre.

Mulching alone did not insure \$1000 to \$1500 an acre crop for Wiltse. He grew his crop on a fertile sandy loam soil on which three-year-

old alfalfa sod had been turned under. He applied 800 to 900 pounds per acre of a 5-20-20 fertilizer before setting the plants, part broadcast and part placed on both sides of the melon row with a potato planter. He used transplants that had been carefully grown in 4-inch bands in a cold frame, controlled beetles early, and sprayed frequently to prevent diseases from gaining headway. He irrigated when drought threatened in August.

The black poly film, 4-foot wide, 1.5 mils (.0015 inch) in thickness, was laid with a machine, loaned by the Bakelite Company, on slightly ridged rows 6 feet apart. Slits were cut in the film and the banded plants set approximately 4 feet apart.

With the use of 4-foot wide film, covered with soil at the edges to hold it in place, about 3½ feet of a 6-foot row was covered. At the prevailing price of 1.5 mil film, the cost of the material to cover two-thirds of an acre is approximately \$150.

The uncovered strips between the rows, approximately 28 inches wide, were cultivated with a small walking rototiller. Hoeing was eliminated and hand weeding was necessary only

close to the plants where the film had been cut to facilitate planting. Four 2 to 3-inch slits, angled in each direction 16 to 20 inches from each hill, were cut in the film to allow moisture movement into the soil under the plastic.

Irrigation Skyrockets Yields

On the university farm in 1957, irrigated plots of the Honey Rock variety on plastic mulch produced fruit with an average weight of 3.68 pounds; without mulch, the fruits averaged only 2.74 pounds. The yield on unmulched plots was 251 bushels per acre; on plastic mulched plots, 541 bushels per acre. On unirrigated plots plastic had no effect on fruit size, but resulted in an increase in yield of from 252 bushels on unmulched areas to 324 bushels per acre.

On an unirrigated, light sandy, rather droughty soil, the early yield through August 15 of Fireball tomatoes was increased 39% by using plastic mulch. On the same soil with irrigation, the early yield of plastic mulched tomatoes was 110% higher

(Continued on page 56)

AMERICAN VEGETABLE GROWER

**THIS
YOU**

It's Veg
you in a
once—a
forms an
your soil
annual g
purslane
the "blan
seldom a
costs for
\$90 per



WEED-KILLING "BLANKET"
IN ACTION! All celery planted same time. Only difference: celery at left was band sprayed once with Vegadex at planting. Results like this last year saved commercial growers from \$20 to \$90 an acre on hand-weeding costs.

THIS NEW WEED-KILLING "BLANKET" CAN SAVE YOU \$20 TO \$90 PER ACRE IN VEGETABLE CROPS

It's Vegadex,[®] and it kills weeds for you in a new way. You spray it only once—at planting time. Vegadex forms an *invisible chemical blanket* over your soil that smothers weeds. Pesky annual grasses—even tough weeds like purslane and henbit—sprout, touch the "blanket," and die. Because weeds seldom appear, Vegadex can cut labor costs for hand weeding as much as \$90 per acre. Your vegetables come

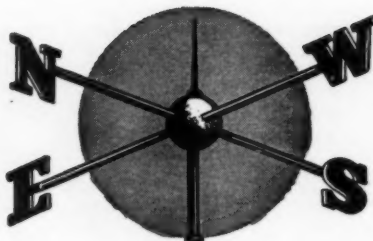
through unharmed, with no weeds to fight them for sunlight, water and plant food. And Vegadex won't "build up" in your soil, even if you spray each time you plant.

Before you plant your next crop, drop by your nearest Monsanto Farm Chemicals Dealer. He'll tell you how Vegadex adds extra profits to every acre of vegetables you harvest.



Make sure you're spraying right. Ask your Monsanto Dealer about the special offer on the SPRAY-RATER that accurately measures the amount of spray your rig applies per acre.

VEGETABLE GROWERS! New Vegadex kills off annual grasses and many broadleaf weeds in greens, garden beets, cole crops, beans and corn.



- Georgia Plants Largest Tomato Crop
- Federal Inspection is Bone of Contention in New York

Largest Tomato Crop

GEORGIA—Colquitt County, the state's largest tomato-producing county, began planting the largest crop in its history in late January.

Last year about 1100 acres of tomatoes were planted in Colquitt. Because of decreased tobacco and cotton allotments as well as a decline in other farm income, tomato acreage is expected to be increased by several hundred acres.

Highlighting news from the state is also a report on a sweetpotato short course held in January at Abraham Baldwin Agricultural College, Tifton, with Dean T. M. Cordell in charge.

"Horse and buggy days" in sweetpotato cultivation and production are over if growers are to make a profit, emphasized speakers. Production of sweetpotatoes in the state has dropped to 14,000 acres, it was pointed out, and consumption, to 8 pounds per capita annually.

Improved methods of production and marketing were pointed out to the growers. —Mrs. Pauline T. Stephens.

Over Ninety Exhibitors

NEW YORK—Convening for the first time with the New York State Horticultural Society, the New York State Vegetable Growers Association and the Empire State Potato Club held a well-attended, active meeting recently in Rochester. More than 90 exhibitors took part in the trade show held in the War Memorial building.

The potato growers provided excitement with a four-hour session. One group within the Empire State Potato Club attempted to take control from the incumbent group because of several differences in opinion, including the merits of the proposed federal grade labeling act under which all potatoes would require grade inspection.

Those in favor of the potato grade labeling act and the National Potato Council, which supports it, presented a motion to dissolve the Empire State Potato Club and organize its members into a new Empire State Potato Growers Co-operative. The movement to disband the club was defeated by a vote of 89 to 18. Phillip Luke, of Fulton, president, led the drive to maintain the Empire State Potato Club in its present form. The new co-operative organization, headed by Ray Gibson, of Wayland, will continue its activities.

New president of the Empire State Potato Club is David R. C. Smith, of Canastota. Karl Hoffman, of Springville, is vice-president, and John K. Jackson, of Savannah, secretary-treasurer.

Officers elected by the vegetable growers include Donald Shoemaker, of Webster, renamed to a second term as president, and William Giddings, of Baldwinsville, renamed secretary.

It was incorrectly reported in February, 1958, issue of AMERICAN VEGETABLE GROWER that the Empire State Potato Club was dissolved in January and its funds turned over to its successor, the Empire State Potato Growers Co-operative.—Ed.

See page 48 for
State News Special Report

Coyotes Like Melon

KANSAS—Watermelon growers around Manhattan complain at times about the number of melons ruined by coyotes. Although these animals are meat eaters, some coyotes are especially fond of watermelon, according to H. T. Gier, Kansas State College zoologist. He added that coyotes also eat fruits in considerable quantities.

Officers Reelected

OHIO—All officers of Cleveland Greenhouse Vegetable Growers Association were reelected for their fifth term at a recent annual meeting in Columbia Station. They were Paul B. Ruetenik, Vermilion, president; E. D. Hoag, Elyria, vice-president; C. W. Sanderson, Columbia Station, executive secretary. Selected to serve three-year terms on the board of directors were Ruetenik; A. G. Heinrichs, Cleveland; W. R. Kusse, Berea.

Heading the list of 1958 officers for Ohio Pesticide Institute, Inc., is P. C. Pratt, Letherman's, Inc., president. J. J. Coyle, Rohm & Haas Co., is first vice-president; W. J. Majure, California-Spray

Chemical Corp., second vice-president; J. D. Wilson, Ohio Agricultural Experiment Station, Wooster, secretary; V. H. Davis, Ohio Farm Bureau, treasurer; and H. E. Bennett, Shell Chemical Corp., business manager. Directors include D. Lyle Goleman, Ohio State University extension service; M. G. Farleman, Standard Oil Co. of Ohio; D. W. Zimmerman, Diamond Fertilizer Co.; Bruce Simms, American Cyanamid Co.; Roy Rings and Richard Davis, both Ohio experiment station.

Less Tonnage

PENNSYLVANIA—Growers in the state produced 35% less tonnage of vegetables in 1957 than in the previous year, according to the state department of agriculture.

State-federal records showed that 284,300 tons of 22 vegetable crops for fresh market and processing were below the 438,200-ton mark for 1956.

Most of the decrease was attributed to poor yields for the five major processing crops, which totaled 164,500 tons for 1957, compared with 284,300 tons a year earlier. Drought conditions in non-irrigated, south-eastern counties cut yields, observers said.

Tomato and sweet corn tonnage for processing dropped 45 and 51% below the 1956 (Continued on page 20)

Know Your . . .

VEGETABLE SEEDS

By VICTOR R. BOSWELL
U.S. Department of Agriculture

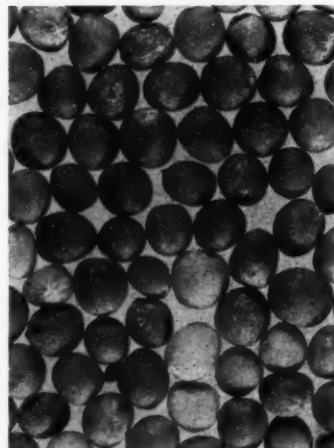
KALE

KALE seeds appear just like the seeds of cabbage and other members of the species to which they belong. Kale seeds are small (8000 to 9000 per ounce), nearly spherical, dark brown to bluish black, and have finely reticulate surfaces, sometimes with faint, irregular markings. Like cabbage and the other biennials of the species, kale bears its seeds in long, slender, two-parted pods, called siliques, on much-branched seed-stalks that arise in the second season of growth after a period of rest imposed by low temperatures.

Kale seed is among the longer-lived vegetable seeds, retaining good viability five years or more when stored under proper conditions: cool and dry.

Climatic requirements for producing kale seed are less exacting than those for producing cabbage seed. In addition to that grown in the West, small acreages of kale may be grown for seed in the East.

Published data indicate that about a third to a half of our annual supply of kale seed is produced in this country—some 15,000 up to 45,000 pounds, with about 25,000 to 45,000 pounds imported annually. Most of the imports are from northern Europe. It is probable that many small sources of



kale seed in this country are not reported so that more than half of our actual supply is of domestic origin.

S

resident;
Experi-
V. H.
er; and
busi-
Lyle
tension
rd Oil
diamond
merican
Richard

state
bles in
accord-
culture.
284,300
n mar-
38,200-

uted to
cessing
r 1957,
earlier.
south-
s said.
r proc-
ne 1956

S

ed

POWER



22 minutes, 6 bolts, and she's ready to roll!

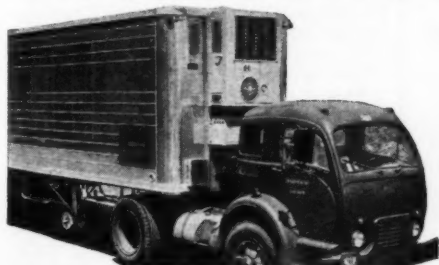
It never takes long to repair a Thermo King unit. Rigs roll in—we fix 'em right quick, or put in a fast replacement. And out they go, sometimes in minutes.

No need to disturb the cargo. No waiting for parts. No long replacement worries. You won't believe it, but we can change out a whole unit—from the outside—by just unscrewing 6 bolts!

Service is a big thing with Thermo King. It's the only outfit in the business that backs you up

with service all over the country. You can find a Factory Authorized Service station like ours along every truck route in the States and Canada. And besides that, a fleet of Thermo King station wagons with engineers will help you out of a rough spot in an emergency day or night.

Like I learned back at the factory school: Thermo King truck refrigeration units are the best in the world. A supply of factory parts and guys like me help keep them that way.



THERMO

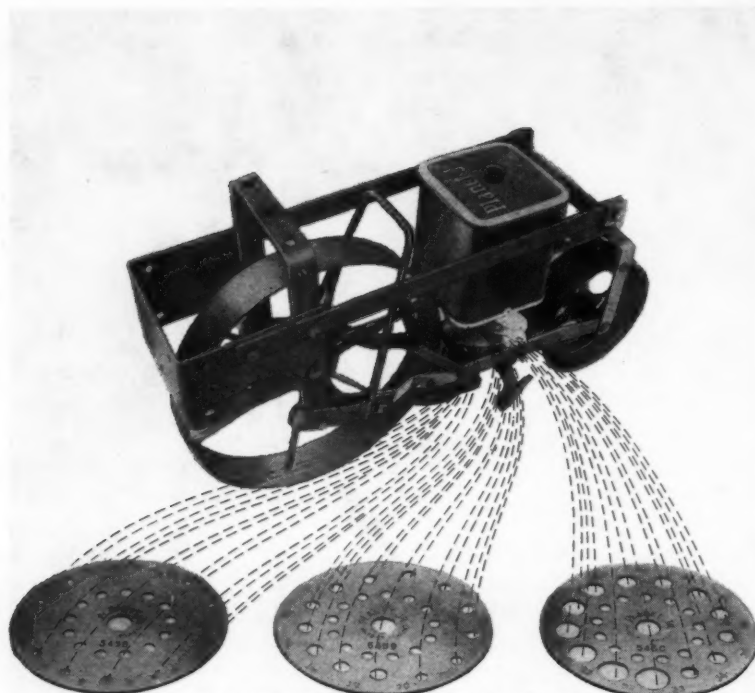


KING

44 South 12th Street

Minneapolis 3, Minnesota

British Commonwealth: Canadian Thermo Control Co., Ltd. Montreal, Quebec



SMALLEST SEEDS TO BUSH LIMAS

Planet Jr. SEEDER UNIT NO. 9192X

... handles over 39 different size seeds
... with accuracy!

This Planet Jr. Seeder Unit is furnished with three seed plates ... giving a selection of 39 hole sizes for planting any size seed from the smallest vegetables to bush limas. It row-plants accurately a prescribed number of seeds per foot. The No. 9192X, like all Planet Jr. seeder units, is easy to clean, easy to fill, and is built for quick changing of seeding plates. It is especially adaptable for use with most general purpose tractors. There is a complete line of Planet Jr. "packaged" seeding attachments available.

Here are the extras available for Planet Jr. No. 9192X

PRESS WHEELS—a wide number of press wheels to choose from—flat, concave, split, open-center and rubber-tired.

STANDARD—there is a wide variety available for mounting 9192X seeder to your tool bar—either front, rear or side-offset.

DRIVE WHEELS—choose from flat, flanged and furrow-flanged drive wheels—whichever suits your soil conditions best.

OPENING PLOWS—a large selection with planting range from 0 to 3½ inches in depth—from 1 to 6 inches in width of furrow.

... finest in the field
for over 85 years



WRITE FOR DETAILS TODAY!

S. L. ALLEN & CO., Inc.
3419 N. 5th Street, Phila. 40, Pa.

Please send me complete details on Planet Jr. 9192X Seeder Unit

Name.....
Address.....
City..... Zone..... State.....

STATE NEWS

(Continued from page 18)



William Giddings (left), of Baldwinsville, was re-elected secretary of New York State Vegetable Growers Association during annual meeting in January. Donald Shoemaker (right), of Webster, was renamed president.



New officers of Empire State Potato Club are John K. Jackson (left), Savannah, N. Y., secretary-treasurer, and David R. C. Smith, of Canastota, president. Karl Hoffman, of Springville, who is vice-president, is not shown.

figure as a result of smaller harvested acreage and lower per acre yields.

The Federal-State Crop Reporting Service estimated the value of all vegetable crops in the state at \$18,633,000 in 1957, or \$3,400,000 below the 1956 total.

Fresh for New Year's

CALIFORNIA—The first asparagus crop of the nation beat the arrival of the New Year. Grown on the Brock Ranches of El Centro, this fresh asparagus brought a premium of \$50 per crate in New York City.

Regular asparagus harvesting in the Imperial Valley began around January 15. The remarkably early crop, which was harvested the last week of December, was made possible by heating the maturing asparagus through electric wiring just beneath the plant crowns. This artificial heating was carried on for two weeks.—William Rutledge III.

Insect Control

OREGON—Wireworms and tuber flea beetles have been controlled "almost perfectly" for nine years by a single application in respective test plots of aldrin and dieldrin at the rate of 10 pounds per acre.

This fact was revealed at the recent 17th annual Pacific Northwest Vegetable Insect Conference in Portland.

The two-day program also included the following reports:

Thimet provided 80% control of carrot rust flies that have developed a high degree of resistance to chlorinated hydrocarbons in the Seattle area. Some 300 acres were totally destroyed in 1956 before new control measures were discovered.

Green peach aphids on potatoes were controlled by aerial application of Thiodan, either dust or spray. The material

AMERICAN VEGETABLE GROWER

"THE
mem
vegetables
the series
some bad
is the wa
spoke. C
Florida si
The g
where tho
grown sa
throwing
When the
workers
plants by
cedure, th
some retu
have alre
Followi
were repl
some inco
Mostly sq
beans, an
their crop
planted. F
failures, a
fertilizer
already p
previous o
ers to an
Florida
because o
vegetable
fear regul
will be b
It is e
April bef
expected
overlappi
and South

is partic
perature

Promis
onion ma
GC-1189,
with som
smut as c
aldehyde
into furre

Applica
seed befo
population
Curly to
months a
forms of
broadcast
first com
curly top
days afte
R. W.
entomolo
the comi
be Januar

CALENDAR MEET

Mar. 16-
association.
Inn, Bake
Exec. Mr.

Mar. 18-
port Hotel

Mar. 27-
Course, P
Minnesota,
search Fe
Minnesota

Apr. 1-2-
ation Hall

Dec. 8-1
America G
land, Ohio
17th St. ar
ton 6, D.C.

MARCH,

Special Report on FLORIDA FREEZE

"THE worst winter season we can remember," is the way veteran Florida vegetable growers describe the effects of the series of freezes this winter. "I've seen some bad years but never one this black," is the way George Cooper of Princeton spoke. Cooper has farmed in southern Florida since 1926.

The giant B. & L. Farms of Dade County where thousands of acres of tomatoes are grown saved an estimated 500 acres by throwing furrows of dirt over the plants. When the freeze was past, hundreds of workers started gently uncovering the plants by hand. Although an expensive procedure, the salvaged crop could make handsome returns in a year when tomato prices have already reached \$12.00 a bushel.

Following the freeze, thousands of acres were replanted in an attempt to salvage some income from the disastrous season. Mostly squash, cucumbers, bunch and pole beans, and some cantaloupe, which mature their crops relatively quickly, were being planted. Farmers, hit hard by repeated crop failures, are reported being financed by fertilizer and insecticide dealers, who have already put up a good share of money on previous crops, and now are staking growers to another chance.

Florida migrant workers are hard hit because of loss of work from citrus and vegetable harvesting. Northern growers fear regular crews they have had for years will be broken up.

It is expected that it will be at least April before any volume shipments may be expected from Florida. This may cause an overlapping of the spring deal with Georgia and South Carolina shipping areas.

is particularly effective when the temperature is above 75°.

Promising insecticides for combating onion maggots include Thimet, Diazinon, GC-1189, and Guthion. Captan, combined with some insecticide granules, controls smut as effectively as the standard formaldehyde treatment when the captan goes into furrows at time of onion seeding.

Application of Thimet (44D) to beet seed before planting reduced leafhopper populations 96%, Utah tests revealed. Curly top was cut 88%, a count two months after planting showed. Granular forms of diazinon, malathion, and Thimet broadcast by hand when the beets were first coming through the ground held curly top symptoms down 79% some 50 days after treatment.

R. W. Every, Oregon State College entomologist, was elected chairman for the coming year. The next session will be January 19-20, 1959, in Portland.

CALENDAR OF COMING MEETINGS AND EXHIBITS

Mar. 18-19—Kern County Potato Growers Association, 14th annual convention, Bakersfield Inn, Bakersfield, Calif.—Francis P. Pusateri, Exec. Mr., Bakersfield.

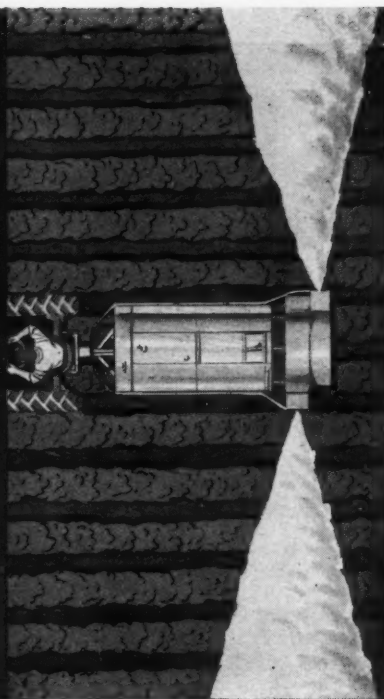
Mar. 18-20—Western Weed Conference, Davenport Hall, Spokane, Wash.

Mar. 27-28—27th annual Horticultural Short Course, Peters Hall Auditorium, University of Minnesota, St. Paul.—Albert G. Johnson, Research Fellow of Horticulture, University of Minnesota, St. Paul 1.

Apr. 1-2—Seed Processors Conference, Recreation Hall, University of California, Davis.

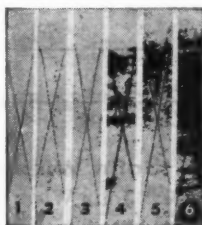
Dec. 8-11—Vegetable Growers Association of America Golden Anniversary Celebration, Cleveland, Ohio.—Joe Shelly, Sec'y, 628 Mills Bldg., 17th St. and Pennsylvania Ave., N.W., Washington 6, D.C.

MYERS BIGGER SPRAY TANK SAVES TIME



The big 500-gallon tank featured on Myers Air Sprayers permits longer continuous spraying—fewer stops a day to cover your fields. Old-fashioned dilute-boom rigs require more watering stops a day to cover the same acreage. Results: faster, more effective coverage and less labor cost, with a Myers Air Sprayer.

NEW COATING PROTECTS TANK LIFE



A new Myers tank coating prevents tank paint peeling and flaking. Test panels 1, 2 and 3 (left) received the new bonded coating; panels 4, 5 and 6 received ordinary treatment. All panels were scratched and immersed in strong solvent usually present in spray mixtures. Results: after several weeks panels 1, 2 and 3 lost no paint; others were stripped nearly bare.



SEE YOUR MYERS SPRAYER DEALER SOON

Myers® POWER SPRAYERS AND IRRIGATION PUMPS

THE F. E. MYERS & BRO. CO.

8803 Orange Street
Ashland, Ohio • Kitchener, Canada



ORTHO Field Reports:



**ORTHO products result
in excellent pest control;
increased yields;
top quality vegetables**

say leading growers



Bill Cornelius

Cornelius Bros. and Co.,
Hendersonville, North Carolina

Chief Crops:

Beans, pole beans, corn, peppers, apples

"ORTHO materials are very dependable.

We are on regular ORTHO spray programs and get excellent insect and disease control resulting in top quality vegetables for our markets."

(From a field interview with Mr. Cornelius)



John Wiesehan

John Wiesehan Co.,
McAllen, Texas

Chief Crops:

Cotton, vegetables

"I have a lot of confidence in

ORTHO products because they are nationally known and are backed by extensive research. The flowability of ORTHO dust is tops and has been giving us excellent pest control. I'm sold on their scientific approach to our problems."

(From a field interview with Mr. Wiesehan)



Guy Lockerman
Owner and Manager, Sunset View Farms,
with ORTHO Fieldman, James McFadden (right)
Middletown, Delaware
Chief Crops: Potatoes, corn, wheat

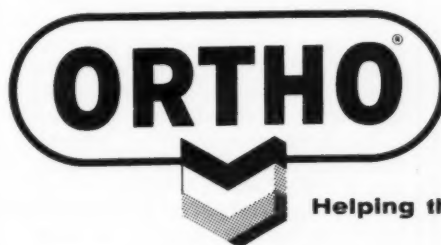
**"The ORTHO program this year
helped me increase my
yields by an average
of 20 bags per acre."**

(From a field interview with Mr. Lockerman)

ORTHO offers a crop protection program tailor-made for your area.

Your ORTHO Fieldman knows the particular problems of your area wherever you farm. When you buy the ORTHO program you get the benefit of

technical field service, a half century of research, and all the scientific know-how that makes ORTHO America's number one line of agricultural chemicals.



Helping the World Grow Better

California Spray-Chemical Corp.

Scientifically trained Fieldmen located in all of the nation's leading vegetable growing areas.

Executive Offices: Richmond, Calif.; Washington, D.C. District Offices: Portland, Ore.; Sacramento, San Jose, Fresno, Whittier, Calif.; Phoenix, Ariz.; Salt Lake City, Utah; Maryland Heights, Mo.; Shreveport, La.; Memphis, Tenn.; Maumee, Ohio; Haddonfield, N.J.; Springfield, Mass.; Medina, N.Y.; Columbia, S.C.; Orlando, Fla.

ON ALL CHEMICALS, READ DIRECTIONS AND CAUTIONS BEFORE USE

ONE TIME PEAT POTS

STURDY SHAPE HOLDING POTS

Made from finest horticultural Peat Moss and fertilized to compensate for decomposition of pot.



PRICES PREPAID on 150 Pounds or more within 1000 miles

4" PACKED 500 to 30 Pound Case			
	Standard	Azalea	
500 to 2,000	\$27.50 M	\$25.00 M	
2,500 to 9,500	25.00 M	22.50 M	
10,000 and over	22.50 M	20.00 M	
3" PACKED 1,000 to 35 Pound Case			
	Square	Round	
1,000 to 9,000	\$16.50 M	\$13.25 M	
10,000 to 49,000	15.25 M	12.25 M	
50,000 and over	14.00 M	11.00 M	
2 1/4" Round—PACKED 2,000 to 32 Pound Case			
2,000 to 18,000		\$ 7.25 M	
20,000 to 74,000		6.75 M	
76,000 and over		6.25 M	
1 3/4" Square—PACKED 2,500 to 30 Pound Case			
2,500 to 17,500		\$ 7.00 M	
20,000 to 70,000		6.50 M	
72,500 and over		6.00 M	

Write for Price List of 100 Pack Cases

A FEW CHOICE DEALER TERRITORIES AVAILABLE

Visqueen Polyethylene Film

A few uses are: Mulching plants; greenhouses; cold frames; fumigating soil; covers for silage pits, hay stacks, machinery, equipment, supplies; enclose work areas; vapor and moisture seal in building construction and cement work; flashing.

F.O.B., Terre Haute, Indiana

	Roll	
3'x250'	.0015 Gauge Black Only	\$ 4.21
3'x1,000'	.0015 Gauge Black Only	16.19
4'x2'x200'	.002 Gauge Clear	6.24
16 1/2'x200'	.002 Gauge Clear	24.71
3'x100'	.004 Gauge Clear	4.49
10 1/2'x100'	.004 Gauge Black and Clear	15.72
16 1/2'x100'	.004 Gauge Black and Clear	24.71
32'x100'	.004 Gauge Black and Clear	47.91
10'x300'	.006 Gauge Black Only	5.62
10 1/2'x100'	.006 Gauge Clear	23.59
16 1/2'x100'	.006 Gauge Clear	37.08
32'x100'	.006 Gauge Black and Clear	71.90

Write for additional widths in Black and Clear

THE DAO CORPORATION

P.O. Box 659 Terre Haute, Indiana

IS YOUR TRANSPLANTER OPERATING EFFICIENTLY?

Today's production operations demand a modern, precision machine for best results

By ROBERT H. POWELL

President, Powell Manufacturing Co., Inc., Wilson, N.C.

TODAY'S transplanting requires a modern precision implement, completely engineered from front to back, to keep pace with other equipment used in the production of vegetable crops. It is usually the most important single operation.

As such, growers should use good judgment in purchasing new transplanters. The machine should be properly adjusted to operate at maximum efficiency.

Before purchasing, check the following points:

The machine should handle plants fast and accurately with no damage to them whatever; the machine should have an accurate troublefree watering system which will handle starter solutions without excessive corrosion; it should be equipped with a furrow-opener suitable to your soil conditions; and it should be engineered and quality-built by a reputable manufacturer who will provide repair parts when needed.

Even the best transplanters require close attention when adjusted for best field work. The furrow opener should be adjusted to *minimum* depth necessary for the plants being set. In that way the water and starter solution will be as close to the plant roots as possible. In addition, the soil will be placed firmly around the roots with less danger of leaving open pockets in the furrow after it is closed by the press wheels.

Spot Check

Particular attention should be paid to timing the water and starter solution so that it is deposited accurately around the plant without washing soil from plant roots before they are completely set. The only sure method is to set a dozen or so plants, then stop the machine and *pull them up* to see if the roots are wet. When properly timed, make sure that the timing device is locked securely in place. Spot check for moisture at least once every hour. Adjust the amount of water placed at each plant to conform with current field conditions.

Check plants for accuracy in spacing, and see that they are standing erect and firmly packed. If plants are leaning, adjust the timing of plant release cams.

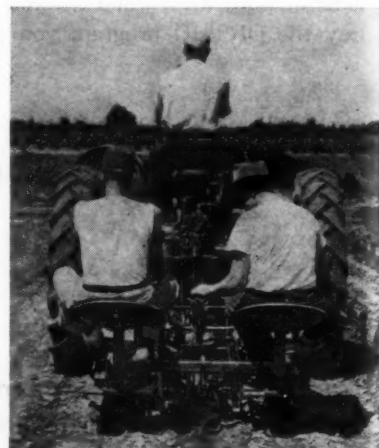
See that packer wheels are adjusted

in order to place the soil firmly around the plants without leaving open pockets in the furrow below ground level. This can be deceiving. In many cases the furrow appears closed but is not down around the roots, the most vital point. One machine now has adjustable packer wheels which can be adjusted in the field to make narrow band wheels for heavy, hard-to-pack soils, medium band wheels for medium soils, or wide band wheels to provide better traction and flotation on the lightest soils.

Operators should be properly instructed in the proper method of feeding plants with the particular machine used, especially those which require direct placement of the plant into the furrow by hand. These will do a very acceptable job, but require more experienced and careful operators—plus closer supervision—than those which place the plant in the furrow with automatic spacing plant hands, correctly timed with the water discharge.

Transplant at Night

Whenever possible transplant late in the day, even at night, to avoid wilting of plants more than necessary. Many growers transplant only at night and, as a result, have reported better livability and faster-growing plants. One Eastern Shore grower



Furrow opener of transplanter should be adjusted to minimum depth necessary for plants being set so that water and starter solution will be as close to plant roots as possible.

AMERICAN VEGETABLE GROWER

Healthy C

LOW

Through c
of a millio
lettuce see

This Mos
Ferry-Mon
growing an

For better
Mosaic Te
Great Lak

De
Me

R
?
?

firml
leaving
below
ceiving.
appears
and the
ne ma-
packer
in the
wheels
medium
oils, or
better
lightest

erly in-
hod of
rticular
e which
e plant
ese will
require
l oper-
—than
he fur-
plant
water

ant late
o avoid
neces-
ant only
reported
rowing
grower



adjusted
being set
ill be as
GROWER



Healthy Great Lakes lettuce from MT seeds.

TAILOR-MADE FOR LOWER MOSAIC INCIDENCE F-M Great Lakes Lettuce

Through constant Mosaic Test readings taken on over three-quarters of a million lettuce plants a year, Ferry-Morse is now producing lettuce seed that is 99.9% Mosaic-free.

This Mosaic Testing Program is constantly being expanded by Ferry-Morse to develop stocks of "Mosaic Free" seed for all lettuce growing areas where Mosaic is a problem.

For better commercial lettuce crops and greater profits, ask for Mosaic Tested seeds of these strains: Great Lakes #366, Regular Great Lakes, Great Lakes #A-36 and Great Lakes #118.



Detroit, Mich. • Mountain View and Los Angeles, Calif.
Memphis, Tenn. • Harlingen, Texas • Tampa, Fla.

MARCH, 1958



TAILOR-MAKING—Ferry-Morse scientific plant breeding develops varieties tailor-made to your specific uses and growing conditions. Shown here is the careful Mosaic indexing of lettuce seedlings.

Announcing The FIRST High Concentrate Axial Flow Sprayer Operated from the Power Take-Off Shaft to Give You the Lowest Priced Air-Blast Sprayer on the Market



MODEL CPS — Sprayer-Duster shown with special two-way Fish Tail nozzle for spraying grapes. Also ideal for orchard and row crop work.

See this NEW Buffalo Turbine Sprayer-Duster at all the Winter Agricultural Shows.

Now you can have all the advantages of Turbo-Spraying and Turbo-Dusting at a new low, in cost. The streamlined, totally enclosed CPS Sprayer-Duster delivers full power for long carry and wide-range coverage. The Axial Flow Blower is operated from the power take-off of your tractor. All controls are within easy reach from the tractor seat.

With the Buffalo Turbine Sprayer-Duster you can dispense liquid or dust separately or both at the same time. The powerful "Turbulent Air" blast gives greater, controlled coverage than ever before attained.

Write for Complete Specifications and Prices.

**BUFFALO
TURBINE**

BUFFALO TURBINE
AGRICULTURAL EQUIPMENT CO., INC.
68 INDUSTRIAL ST. GOWANDA, N. Y.

- ★ Operates from the rear power take-off of any two plow tractor.
- ★ Velocities from a gentle breeze to 180 M. P. H.
- ★ 14,000 cu. ft. of air per minute.
- ★ Turbo-Dust or Turbo-Spray separately or both at the same time.
- ★ Low and streamlined. Ideal for vineyard and orchard work.
- ★ Tested for 2 years in actual field operations before placing on the market.

has installed lights, radio, and a protective covering around his three-row machine and plants almost exclusively after 5 p.m.; all night, if necessary.

Proper handling of plants before going to the field is extremely important. Growers who raise their own plants should delay pulling them as long as possible before transplanting. As much soil as possible should be left on the roots, and they should be kept in a cool dark place until used. Plants should be culled so that only the strongest stock is selected. Growers who buy their plants should accept delivery at the latest time possible prior to planting and observe the above precautions.

The importance of proper land preparation cannot be overemphasized. Troubles are encountered with even the best transplanters because the land is not plowed and harrowed deep enough and not left in a fairly level condition. This becomes particularly serious when planting season is delayed and plants become a good deal larger and longer than anticipated.

Your transplanter is a valuable, money-saving machine if used properly. If not, it can cost you plenty, not only in extra cost in labor for

PEPPER BULLETIN

Farmer's Bulletin No. 2051, distributed by USDA and entitled *Pepper Production, Disease and Insect Control*, contains complete coverage of insects and diseases affecting peppers. Well illustrated, it shows symptoms of disease as it appears on the fruit. A copy may be obtained by sending 15 cents in coin to Superintendent of Documents, Government Printing Office, Washington 25, D. C.

re-setting but also in slow growth, slow maturity of plants, and a resultant delay in reaching the market with your produce.

Proper Care

After using, the transplanter should be cleaned thoroughly and stored in a shed. If starter solutions are used, the water tank and valves should be flushed out thoroughly. The furrow-opener should be greased to retain its smooth, bright finish. Rubber bands or pockets should be removed from plant hands. Order repair parts so they will be on hand in plenty of time.

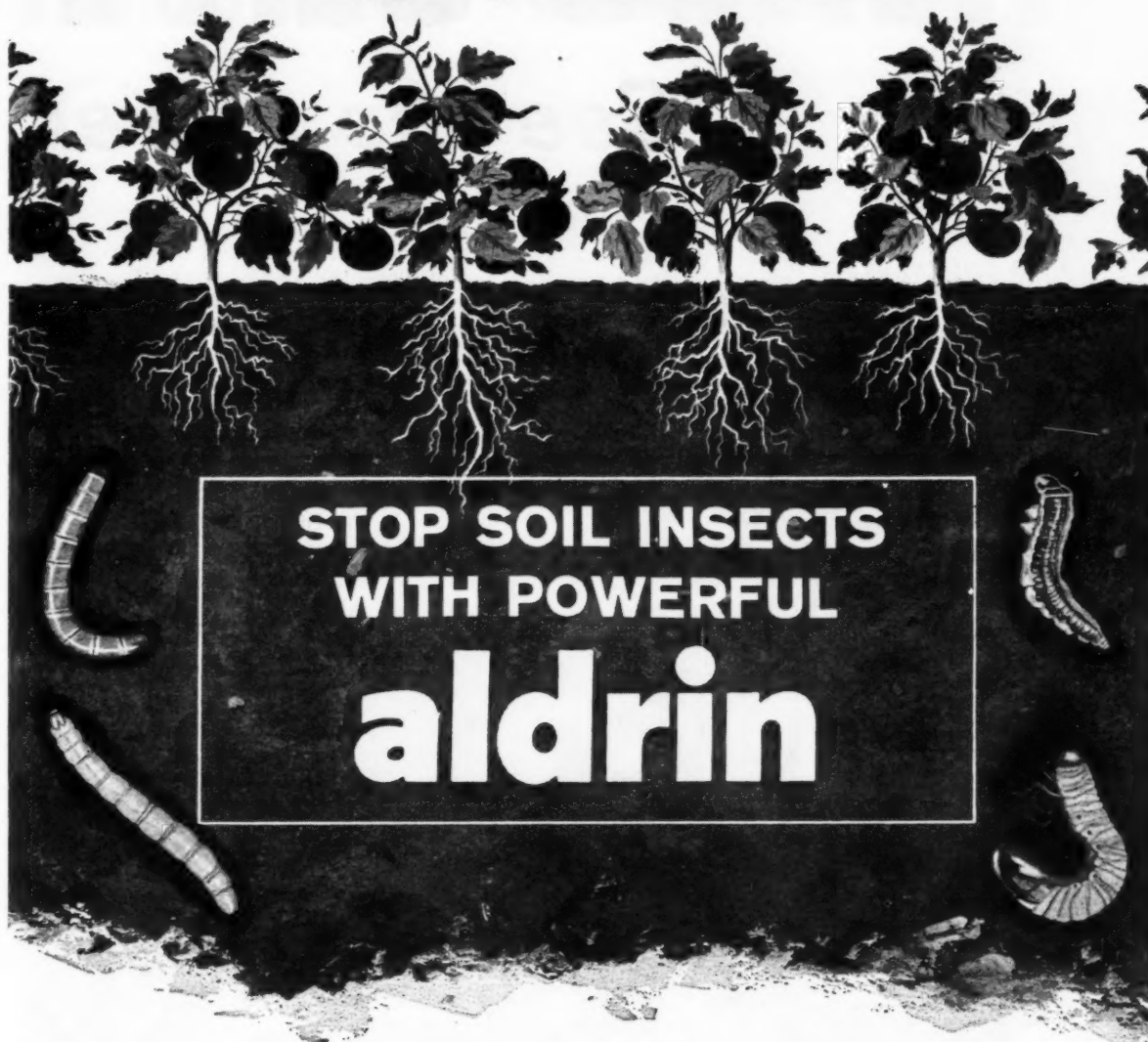
If it is not accurate enough for the type of help you have, out it should go for one of the newer automatic machines.

There should be no necessity for an extra man to follow behind the transplanter, putting in missed plants or re-setting plants not put in properly by the machine. Present-day machines, properly adjusted, will do this job.

THE END.

AMERICAN VEGETABLE GROWER

Protect root systems NOW for bigger yields at harvest!



Each season, soil insects downgrade millions of dollars worth of vegetables and small fruit. These destructive pests attack and destroy seeds and growing root systems . . . preventing vital soil nourishment from reaching growing plants. That's why it will pay you to knock out soil insects with powerful aldrin.

Aldrin kills seed corn maggots, wireworms, rootworms, white grubs, tuber flea beetles and other root-destroying insects. It effectively protects important economic crops which include tomatoes, onions, potatoes, corn and small fruit. And it's economical, too. Just one

preplant treatment with powerful aldrin lasts an entire season.

Aldrin is easy to use. You can apply it as granules, spray or dust, or purchase it in a fertilizer mix. Whichever method you choose, you get dependable protection against soil insects with just small amounts of actual aldrin per acre.

This season, start your plants on the way to a bigger, better, more profitable harvest. Beat soil insects with aldrin. It is available under well-known brand names from your insecticide dealer. *See him today.*

SHELL CHEMICAL CORPORATION

AGRICULTURAL CHEMICAL SALES DIVISION
460 Park Avenue, New York 22, New York



HERE'S OLIVERPO

See the Power! F

Power, power, and *more* power—that's the story of these all-new Oliver tractors. Not alone the *look* of power, but power everywhere you look! New engine power up forward...new traction power behind...new booster power in every working speed. Power steering, power-spaced wheels...

But look over the pictures and see if you don't agree: Oliver is your buy for '58—for *mighty powerful reasons!*

The Oliver Corporation
400 West Madison Street, Chicago 6, Illinois

The New Oliver 880



POWER S

Power steering
desirable v
juster (opti
to match t
vents acci



The Super 44
2 plow

POWER FOR '58

Feel the Power!



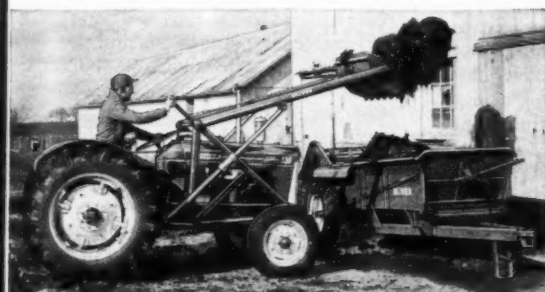
NEW 12 FORWARD SPEEDS!

This new POWER-BOOSTER DRIVE gives you two speeds in every gear—actually 12 forward speeds in all. No stopping, no clutching when the going gets tough—just flick the lever and you're geared down for emergency power. Available on the 770 and 880.



NEW POWER-TRACTION HITCH!

You'll feel its powerful "bear-down" action when your tools hit heavy soil—you push right through without slippage. Spring latches make for fast, snap-on hitching—3-point equipment of all types, all makes. Available on the 770 and 880.



POWER STEERING, POWERJUSTER WHEELS

Power steering available on all models (especially desirable with front-end equipment.) *Powerjuster* (optional on all models) sets wheel tread to match the job. *Safety Switch* (standard) prevents accidental starting.



THE BIG POWER, IN THREE NEW MODELS

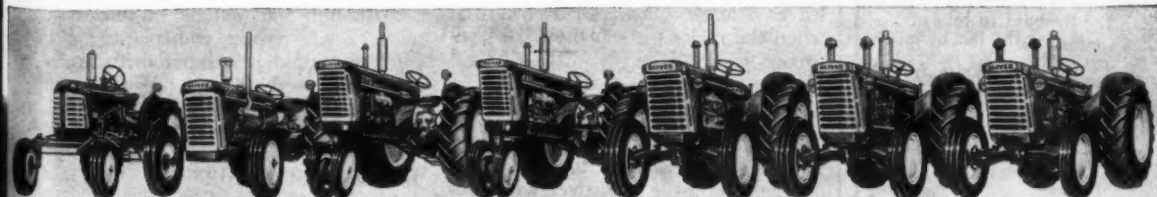
See the 5-6 plow 950, the 6-plow 990 GM, and—mightiest of all—the 995 *Lugmatic* (with GM diesel). *Lugmatic* holds power steady even when the load goes up. Power stays full-on! *Lugmatic* can deliver up to 35% more *lugging* power.



OLIVER

"FINEST IN FARM MACHINERY"

Also Manufacturer of the Famous Oliver Outboard Motors



The Super 44
2 plow

The new 550
2-3 plow

The new 770
3-4 plow

The new 880
4-5 plow

The new 950
5-6 plow

The new 990 GM
full 6-plow

The new 995
GM *Lugmatic*

Ask About The OLIVER Pay As You Produce Purchase Plan

FOR SUPERIOR QUALITY

USE

Jiffy-Pots

THE WORLD'S FINEST PEAT POT



Vegetables in Jiffy-Pots produce an earlier crop and heavier yield. Tomatoes do especially well in Jiffies as do Peppers, Cucumbers, Melons, Cabbage and Eggplant.

This revolutionary plant growing container, imported from Norway, is made of finest quality peat.

Roots grow right through the pot walls, thus permitting planting-out into the field or garden "pot and all."

Wonderful to work with . . . light weight — need less watering — long lasting. Labor saving . . . no knocking out—no messy pot removal. Support better growth . . . no transplant shock—no wilting.

PRICES PREPAID ON 150 LBS. OR MORE

3 1/4 INCH	Per 1000
3,000 to 18,000 (3,000 \$21.75).....	\$7.35
21,000 to 72,000.....	6.75
75,000 up.....	6.25
Sold in cases of 3,000. Minimum order 3,000. 35 lbs. per case.	

5 INCH	Per 1000
1,500 to 9,000 (1,500 \$19.85).....	\$13.25
10,500 to 49,500.....	12.25
51,000 up.....	11.00
Sold in cases of 1,500. Minimum order 1,500. 35 lbs. per case.	

Less than 150 lbs. F.O.B. our warehouse in West Chicago, Ill.; Bayonne, New Jersey; Allentown, Pa.; Toledo, Ohio; Houston, Tex.; Santa Paula, Calif.; San Francisco, Calif.; Portland, Ore.

We also can supply veneer plant bands and Bird Vita-Bands. Write for prices.



JIFFY-POT PRICES
Prepaid in lots of
150 lbs. or more.

Write for
samples.

Gro-Z-Ball
INC.
WEST CHICAGO
ILLINOIS

Dept. V7

Phone 299



A difficulty with preplant treatments is planting in center of treated area. By placing injector chisel in line with rear wheel, marks left in field are guides for subsequent planting.

Nematode Problems Simplified with

ROW-TYPE FUMIGATOR

Indiana melon growers develop two-row applicator to control infestation and cut fumigation costs

By G. F. WARREN

Purdue University

DETERMINED to combat extensive damage of root-knot nematodes on their large muskmelon farms, two progressive Indiana growers built a simple and effective row fumigation outfit.

With the help of a local equipment firm, James Grigsby and Osborne Sharp, both of Gibson County, made an applicator four years ago. This became the model for many others used today by area growers who are adopting soil fumigation as a good control of root-knot.

These compact, tractor-mounted units are equipped to treat two rows at a time. A low-pressure power take-off pump is used. One chisel is placed in front of each tractor wheel, set 5 feet apart, which is the standard row spacing employed by muskmelon growers. Two small disks or shovels follow each shank, leaving a small ridge over the chisel mark. This is followed by the rear wheel, which seals the fumigant in the soil and leaves a mark which can be followed when the melons are planted 10 days to two weeks later.

Vary Technique

On the sandy soils of southwestern Indiana, it is essential to have a rye cover crop on the land over winter to prevent wind and water erosion. This is plowed under in the spring and does not have sufficient time to rot before soil fumigants are applied.

With this fresh rye in the soil, special care is needed to get a good fumigant seal. These growers have

found that by treating in the same direction the field was plowed, rather than across the furrows, and by using covering disks or shovels behind the shanks, a good seal can be obtained.

Most melons in the area are started in cold frames in plant bands and then transplanted to the field by hand. Growing the seedling plants in soils treated for plant parasitic nematode control insures vigorous young plants for transplanting in the field.

When "furfrowing-out" for transplanting, Grigsby and Sharp also do this in the same direction as the field was fumigated in order to avoid dragging untreated soil in the treated band.



Close-up of injector chisel and either coulter or shovels for throwing soil back into channel left by chisel passing through soil.

Although the melons in this area are grown from transplants, the method should be adaptable to areas that field seed directly. With some modification, these applicators might also be used for other crops.

Research at Purdue

Extensive soil fumigation research begun at Purdue University in 1949 showed that soil fumigation gave large melon increases. Experiments since that time revealed that yields may sometimes double by fumigation on severely infested fields. **THE END.**

AMERICAN VEGETABLE GROWER

1958 GROWER'S GUIDE

Helps you plan a complete insect control program for 1958

THE CHECK POINTS and charts on this and the following pages were prepared by the manufacturer of malathion insecticides to help you get top yields of quality crops.

☐ **1. Have you reviewed this year's recommendations from your State Extension Service?**

Your Experiment Station is constantly working with both new and established insecticides under conditions similar to your own. Their recommendations are meant to help you. Check local agricultural authorities for particular application and timing problems. Generally, more than one insecticide is listed for a given job. Use the following checks to help you narrow the list.

☐ **2. How many different insects does the insecticide control?**

To keep control programs simple, a good insecticide should have a wide use range. That is, let you control many different bugs with one spray. Malathion, for example, kills 105 insects on 93 different crops. An insecticide that does well on only one or two insects is probably not your best bet; investigate the chemical for overall performance.

☐ **3. How about toxicity?**

Does it require use of respirator, protective clothing? Can careless use endanger you and your help?

Most of the effective phosphate insecticides are *high* in toxicity to man, requiring respirators and cumbersome protective clothing. Malathion does not. It combines effectiveness with safety; the U.S. Public Health Service *Memoranda on Economic Poisons* says, "the toxicities of malathion (oral and through the skin) are less than those of DDT."

☐ **4. Is the insecticide's residue tolerance high?**

Can it be used for close-to-harvest control? Because the Miller Amendment has set limits on insecticide residues, and because close-to-harvest insect control is often necessary, the residual activity of insecticides has become important. Malathion gives fast, thorough kills; then solves residue problems two ways. Its residues disappear rapidly; and it has a high residue tolerance. Thus, you can spray or dust malathion up to 72 hours from harvest of many crops. In fact, even between pickings and cuttings.

☐ **5. Is the insecticide compatible with fungicides, other insecticides?**

Time and money do not permit a different spraying for each of your control problems. The best insecticide has to be a "good mixer" because more and more control programs and state recommendations call for combinations of two or more

materials. Malathion is compatible with most fungicides and other commonly used phosphate and chlorinated insecticides.

☐ **6. Is the insecticide available in the form your equipment requires?**

Does the formulation clog nozzles or tend to settle out? The right insecticide for you does the job with the least trouble, in the equipment you have. For example, while most formulations are suitable for high pressure equipment, emulsions should be used in low pressure sprayers. Many manufacturers package malathion in liquids, dusts and wettable powders, alone and in combination with other materials.

☐ **7. How does the insecticide affect fruit finish?**

Under certain conditions, several phosphate insecticides may damage the finish of McIntosh and related varieties. Malathion is the specified phosphate in the fine finish program of many states because of its wide margin of safety to fruit and foliage.

On the next two pages is a chart of rates, timing and application techniques for malathion formulations including new uses for 1958.

1958 MALATHION GROWER'S

FRUIT

PEST	Amount		Dust Per Acre	Residue Tolerance	Interval (Days) Between Last Appli- cation and Harvest
	Emulsifiable Liquid Per 100 gals.	Wettable Powder 25% Per 100 gals.			
APPLES					
Woolly apple aphid	1 pt.	2 lbs.	—	8ppm	3
Bud moth					
Green apple aphid	1½ pts.	2 lbs.	—	8ppm	3
Rosy apple aphid		2½ lbs.			
Mealybug	1-2 pts.	2½ lbs.	—	8ppm	3
Mites such as:					
European red mite					
Clover mite	1-2 pts.	2-2½ lbs.	—	8ppm	3
*Willamette mite					
*Two-spotted mite					
*Make at least two applications 10-12 days apart in summer months.					
Codling moth					
Plum curculio	2 pts.	3 lbs.	—	8ppm	3
Red-banded leaf roller					
Forbes scale	1 pt.	2½ lbs.	—	8ppm	3

*Make at least two applications 10-12 days apart in summer months.

Make two or three thorough spray applications.

These pests are also controlled by combining 2 lbs. Wettable

Powder and 2½ lbs. 50% Methoxychlor WP or 2 lbs. 50% DDT, WP.

With DDT 30
Methoxychlor 14

Malathion Emulsifiable Liquid may cause injury to McIntosh and Cortland varieties in summer sprays.

APRICOTS

Codling moth	—	—	—	—	—
Orange tortrix	—	—	—	—	—
European Lecanium	1½-2 pts.	4 lbs.	—	8ppm	7
scale	—	—	—	—	—
Soft brown scale, Aphids	—	—	—	—	—

ARROWS INDICATE CROPS WHICH
RECEIVED NEW LABEL
CLAIMS FROM THE USDA FOR 1958

AVOCADOS

Latania scale	—	—	—	—	—
Greenhouse thrips	—	—	—	—	—
Omnivorous looper	1½ pts.	3 lbs.	—	8ppm	7
Orange tortrix	—	—	—	—	—
Soft brown scale	—	—	—	—	—

CHERRIES

Black cherry aphid	—	2 lbs.	—	8ppm	3
Black cherry aphid and	—	—	—	—	—
Fruit tree leaf roller	1½ pts.	—	—	8ppm	3
Cherry fruit fly*	—	—	—	—	—
Bud moth	1 pt.	2 lbs.	—	8ppm	3

*Repeat application every 10 days.

Injury may occur on certain varieties of sweet cherries particularly in the Northwest.

NECTARINES

Plum curculio	2 pts.	3 lbs.	—	8ppm	7
Mites	1-2 pts.	2½ lbs.	—	8ppm	7
Parlatoria scale	—	2 lbs. + 1 gal. lgt.-med. oil*	—	8ppm	7

*Application of this mixture should be made only in the petal fall period.
Malathion may cause fruit spotting on nectarines.

PEACHES

Mites such as:	—	—	—	—	—
European red mite	—	2-2½ lbs.	—	8ppm	7
Two-spotted mite	—	—	—	—	—
Oriental fruit moth	2 pts.	3 lbs.	—	8ppm	7
Plum curculio	—	—	—	—	—
San Jose Scale	—	SEE NOTE*	—	8ppm	—
(California Only)	—	—	—	—	—

*Prepare tank mix of 3 pounds 25% Wettable Powder plus 2 gallons oil emulsion and 4 pounds fixed copper per 100 gallons of water. Apply only when trees are dormant.

These pests are also controlled by combining 2 lbs. Wettable

Powder and 2½ lbs. 50% Methoxychlor WP or 2 lbs. 50% DDT, WP.

With DDT 30
Methoxychlor 14

PEARS

Mites	1-2 pts.	2-2½ lbs.	—	8ppm	3
Pear psylla	1-2 pts.	2-2½ lbs.	—	8ppm	3
Mealybug	1-2 pts.	2½ lbs.	—	8ppm	3
Codling moth	—	—	—	—	—
Plum curculio	—	—	—	—	—
Fruit tree leaf roller	2 pts.	3 lbs.	—	8ppm	3
Red-banded leaf roller	—	—	—	—	—

These pests are also controlled by combining 2 lbs. Wettable

Powder and 2½ lbs. 50% Methoxychlor WP or 2 lbs. 50% DDT, WP.

Injury may occur to Bosc pears under certain conditions in the Northeast using malathion sprays.

With DDT 30
Methoxychlor 14

Thorough, full-cover sprays should be made

FRUIT

PEST	AMOUNT			
	Emulsifiable Liquid Per 100 gals.	Dust Per Acre	Residue Tolerance	Interval (Days) Between Last Appli- cation and Harvest
PLUMS & PRUNES				
Mealy plum aphid	1 pt.	—	—	—
Plum curculio and	See combined	—	—	—
Mealy plum aphid	—	—	—	—
Prunes: San Jose Scale	—	—	—	—
(California Only)	—	—	—	—
*Prepare tank mix of 3 pounds 25% Wettable Powder and 2½ lbs. 50% Methoxychlor WP or 2 lbs. 50% DDT, WP.	—	—	—	—
Apply only when trees are dormant.	—	—	—	—
Prunes: Bud moth	1 pt.	—	—	—

These pests are also controlled by combining

Powder and 2½ lbs. 50% Methoxychlor WP or 2 lbs. 50% DDT, WP.

QUINCES

Plum curculio	2 pts.	—	—	—
Codling moth	—	—	—	—
Oriental fruit moth	—	—	—	—
Forbes scale	2 pts.	—	—	—
Mites	1-2 pts.	—	—	—

PECANS

Aphids	1-2 pts.	—	—	—
Spider mites	—	—	—	—
Pecan nut casebearer*	—	—	—	—
Pecan phylloxera**	—	—	—	—

*After first generation eggs begin to hatch

**Early spring after unfolding pecan buds 3 inches of green

WALNUTS

Walnut husk fly	—	8-10 lbs. by ground	—	—
Aphids	—	4-8 lbs. by air 4%	40-60 lbs. 4%	—
Mites	—	4-8 lbs. by air 4%	—	—

Bait Sprays: Combine Staley's sauce (2 qts. per acre) to

BLACKBERRIES — BOYSENBERRIES — DEW DOG BERRIES

Mites, Thrips, Leafhopper	1½ pts.	—	—	—
Japanese beetle	1½ pts.	—	—	—

BLUEBERRIES

Cranberry fruit worm	—	—	—	—
Cherry fruit worm	—	—	—	—
Blueberry maggot	—	25 lbs. 4%	—	—

Repeat needed.

CRANBERRIES

Leafhoppers	1½ pts.	50 lbs. by air	—	—
Black-headed	—	30-40 lbs. by ground	—	—
fireworms	—	4 or 5%	—	—
Spittlebug nymphs	1½ pts.	—	—	—
Cranberry fruitworm	—	—	—	—

CURRENTS — GOOSEBERRIES

Mites	—	—	—	—
Japanese beetle	—	—	—	—

GRAPES

Leafhopper	1½ pts.	20-40 lbs. 4% + sulfur	—	—
Spider mites	1½ pts.	20-40 lbs. 4% + sulfur	—	—
Mealybugs	1½ pts. (50-100 gals.)	—	—	—

Make 2 applications as needed.

Injury may occur with Emulsifiable

STRAWBERRIES

Aphids	1½ pts.	40 lbs. 4% + sulfur	—	—
Spider mites	—	—	—	—

h, full-coverage should be made.

AMOUNT	Interval (Days) Between Last Appli- cation and Harvest	Residue Tolerance	Dust Per Acre	Emulsifiable Liquid Per 100 gals.	Wettable Powder 25% Per 100 gals.
100 gals.	3	8ppm	—	—	—
See combined	—	8ppm	—	—	—
—	—	8ppm	—	—	—
25% Vegetable oil emulsion per 100 gallons of water.	—	8ppm	—	—	—
Formaldehyde	—	8ppm	—	—	—
With DDT 30	7	8ppm	—	—	—
Methoxychlor 50% D.T. WP.	—	8ppm	—	—	—
3	3	8ppm	—	—	—
3	3	8ppm	—	—	—
3	3	8ppm	—	—	—
—	—	8ppm	—	—	—
begin to harvest	—	8ppm	—	—	—
g pecan buds 3 inches of green growth.	—	8ppm	—	—	—
8-10 lbs. A. by ground	—	8ppm	—	—	—
Staley's sauce (2 qts. per acre) to above dosages.	—	8ppm	—	—	—
4-8 lbs. A. by ground	—	8ppm	—	—	—
4-8 lbs. A. by ground	—	8ppm	—	—	—
RIES — DEW BERRIES — RASPBERRIES	7	8ppm	—	—	—
1/2 pts.	7	8ppm	—	—	—
1/2 pts.	7	8ppm	—	—	—
—	1	8ppm	—	—	—
Apply 50 gals. per acre.	—	8ppm	—	—	—
hatch and repeat every 4 or 5 days until a total of 4 applications	—	8ppm	—	—	—
—	1	8ppm	—	—	—
—	1	8ppm	—	—	—
Repeat as needed.	—	8ppm	—	—	—
1/2 pts.	3	8ppm	—	—	—
30 lbs. by air	3	8ppm	—	—	—
30-40 lbs. by ground machine	3	8ppm	—	—	—
4 or 5%	3	8ppm	—	—	—
1/2 pts.	3	8ppm	—	—	—
—	3	8ppm	—	—	—
—	3	8ppm	—	—	—
1/2 pts.	3	8ppm	—	—	—
1/2 pts.	3	8ppm	—	—	—
20-40 lbs. 4% + sulfur	3	8ppm	—	—	—
20-40 lbs. 4% + sulfur	3	8ppm	—	—	—
Make 2 applications as needed.	—	8ppm	—	—	—
1/2 pts.	3	8ppm	—	—	—
50-100 gals.)	3	8ppm	—	—	—
may occur with Emulsifiable Liquid	3	8ppm	—	—	—
1/2 pts.	3	8ppm	—	—	—

VEGETABLES

PEST	Emulsifiable Liquid Per 100 gals.	Wettable Powder 25% Per 100 gals.	Dust Per Acre	Residue Tolerance	Interval (Days) Between Last Appli- cation and Harvest
ASPARAGUS					
Asparagus beetle	2 pts. per acre	—	—	8ppm	3
Use in sufficient water for good coverage.					
BEANS					
Mexican bean beetle	1 1/2 pts.	—	30-35 lbs. 4 or 5%	8ppm	1
Leafhopper	—	—	30-35 lbs. 4%	8ppm	1
Spider mites	1-1 1/2 pts.	—	—	8ppm	1
Make 2 or more applications as needed.					
BEETS					
Aphids	1 1/2-2 pts.	—	—	8ppm	7
BROCCOLI — CABBAGE — KALE — TURNIP — MUSTARD GREENS					
Aphids	—	—	—	8ppm	3
Imported cabbage-worm	1-2 pts.	2 lbs.	30 lbs. 4 or 5%	8ppm	7
Cabbage looper	—	—	—	8ppm	7
BROSSELS SPROUTS					
Aphids	1-2 pts.	2 lbs.	30 lbs. 4 or 5%	8ppm	7
CARROTS — RADISHES — PARSNIPS — SALSIFY — HORSE RADISH					
Aphids	1 1/2-2 pts.	2 lbs.	30-35 lbs. 4%	8ppm	7
CAULIFLOWER					
Aphids	—	—	50 lbs. 4%	8ppm	7
CELERY					
Aphids Spider mites	1 1/2 pts.	—	—	8ppm	7
COLLARDS — DANDELION — WATERCRESS — SWISS CHARD — PARSLEY					
Aphids	1 1/2-2 pts.	2 lbs.	30-35 lbs. 4%	8ppm	7
CUCUMBERS — SQUASH — MELONS					
Aphids	1 1/2 pts.	—	30-35 lbs. 4 or 5%	8ppm	3
Spider mites	—	—	—	8ppm	3
Leafhopper on melon	—	—	30-35 lbs. 4 or 5%	8ppm	3
Do not apply malathion to cucurbits unless plants are dry.					
EGGPLANT					
Aphids Spider mites	1 pt.	2 lbs.	—	8ppm	3
Lace bug	3 pts.	—	—	8ppm	3
ENDIVE (Escarole)					
Aphids Mites	1 1/2-2 pts.	2 lbs.	30-40 lbs. 4%	8ppm	7
GARLIC — LEEKS — SHALLOTS					
Aphids Thrips	1 1/2-2 pts.	4 lbs.	—	8ppm	3
KOHLRABI					
Aphids	1-2 pts.	2 lbs.	30 lbs. 4%	8ppm	7
LETTUCE					
Aphids	2 pts.	2 lbs.	30-40 lbs. 4%	8ppm	Leaf 10 Head 7
Mites	—	—	30-40 lbs. 4%	8ppm	
Cabbage looper	—	—	30-40 lbs. 4%	8ppm	
Leafhoppers	2 pts.	—	—	8ppm	
ONIONS					
Thrips	1 1/2 pts.	4 lbs.	30-40 lbs. 4 or 5%	8ppm	3
PEAS					
Pea aphid	1 1/2 pts.	—	25 lbs. 4 or 5%	8ppm	3
PEPPERS					
Aphids	1 pt.	2 lbs.	—	8ppm	3
POTATOES					
Aphids Leafhopper	1 pt.	2 1/2 lbs.	25-30 lbs. 5%	8ppm	3
PUMPKINS					
Aphids, Mites Leafhoppers	1 1/2 pts. } —	—	30-35 lbs. 4%	8ppm	3
Do not apply malathion to cucurbits unless plants are dry.					
RUTABAGAS					
Aphids	1 1/2 pts.	—	—	8ppm	3
SPINACH					
Aphids	2 pts.	—	30-35 lbs. 4%	8ppm	7
TOMATOES					
Spider mites	1 1/2 pts.	2 lbs.	35-45 lbs. 4 or 5%	8ppm	3
Aphids	1 pt.	2 lbs.			
Tomato russet mite	—	2-4 lbs.			

PULL OUT... KEEP FOR HANDY REFERENCE

Thorough, full-coverage applications should be made.

PEST	AMOUNT				Interval (Days) Between Last Appli- cation and Harvest
	Emulsifiable Liquid Per 100 gals.	Wettable Powder 25% Per 100 gals.	Dust Per Acre	Residue Tolerance	
CITRUS Grapefruit—Lemons—Limes—Oranges—Tangerines—Tangelos—Kumquats					
California red scale					
Yellow scale					
Purple scale					
Black scale (single brooded)	1-1½ pts.	2½-3½ lbs.	—	8ppm	7
Soft scale					
Citricola scale					
Florida red and purple scales (light and medium infestations)	2 pts.	3 lbs.—light 3-5 lbs.— medium	—	8ppm	7
Thrips	2½ pts. per 200 gals.	6 lbs.	—	8ppm	7
Dosages per acre	➔				
Green citrus aphid	—	1-2 lbs.	—	8ppm	7
Mediterranean Fruit Fly	—	2-3 lbs.* per acre	—	8ppm	3

*Add 1 pound of yeast hydrolysate or 1 quart of sauce base No. 2. Use sufficient water for good coverage by ground or air equipment. Malathion may be toxic to certain species of fish, particularly in shallow water.

Make no applications when trees are in bloom.

For further information on use of malathion, either alone or in combination with petroleum oil, parathion or other materials, see local agricultural authorities.

FLIES

FOR USE IN AND AROUND BUILDINGS WHICH HOUSE DOMESTIC ANIMALS, AROUND YARDS, AROUND HOMES, AND AROUND MEAT PROCESSING ESTABLISHMENTS

STRAIGHT MALATHION SPRAYS			BAIT SPRAYS (WITH SUGAR)		
Amount Spray	Amount Emulsifiable Liquid	Amount 25% Wettable Powder	Add		
			Sugar	or	Molasses* or Corn Syrup
2½ gals.	1 cup	1 lb.	1 cup		1 cup
12 gals.	1 qt.	5 lbs.	2½ lbs.		1 qt.
100 gals.	2 gals.	40 lbs.	20 lbs.		2 gals.

*Use unsulfurized molasses.

Apply the spray at the rate of one gallon per 1,000 square feet on painted surfaces and two gallons per 1,000 square feet on unpainted surfaces where flies alight or congregate. Use 3 gallons of malathion Emulsifiable Liquid or 40 lbs. of 25% Wettable Powder with 40 lbs. of sugar per 100 gallons if fly population is severe. In most cases, adding molasses or sugar to the spray prolongs the insecticidal activity of malathion and serves as fly attractant. Do not use in milk rooms. Avoid contamination of feed and food products, also drinking fountains and feed troughs. Remove lactating animals and calves under one month of age from building before treating. Do not leave within reach of children. Do not use in rooms where edible products are handled.

OTHER USES FOR MALATHION

Direct application on livestock

Malathion can now be applied directly on cattle, hogs and poultry for control of external parasites: lice, ticks and horn flies on beef; non-lactating dairy cattle; lice on hogs; mites and lice on poultry. Malathion's *direct application* control of pests on livestock, plus its effectiveness against flies, in and around stock buildings, now gives farmers *one* insecticide for control of major insects.

Ornamentals and Greenhouses

Malathion controls practically all insects attacking ornamentals. In aerosol form, it is widely used for control of greenhouse pests.

Field Crops

Malathion is now recommended on clover, alfalfa, grains, cotton and tobacco for control of many insects.

Household use — Pets

Malathion can be used indoors for control of roaches, silverfish and many other household pests. Applied directly on pets and in their quarters, it controls fleas and ear mites.

Write for more information on these uses for malathion

FORMULATIONS

American Cyanamid produces and sells technical malathion to over 100 well known manufacturers. These manufacturers formulate malathion under many brand names, in emulsifiable liquids containing four or five pounds of malathion per gallon; wettable powders containing 25% malathion; and dusts containing 4% and 5% malathion.

WANT MORE COPIES?

Write to: American Cyanamid Company, Insecticide Dept. I, 30 Rockefeller Plaza, New York 20, N.Y. for more copies of this 1958 Malathion Grower's Guide

Please include your address and the number of additional copies you want



fmc

Check-Way Baggers

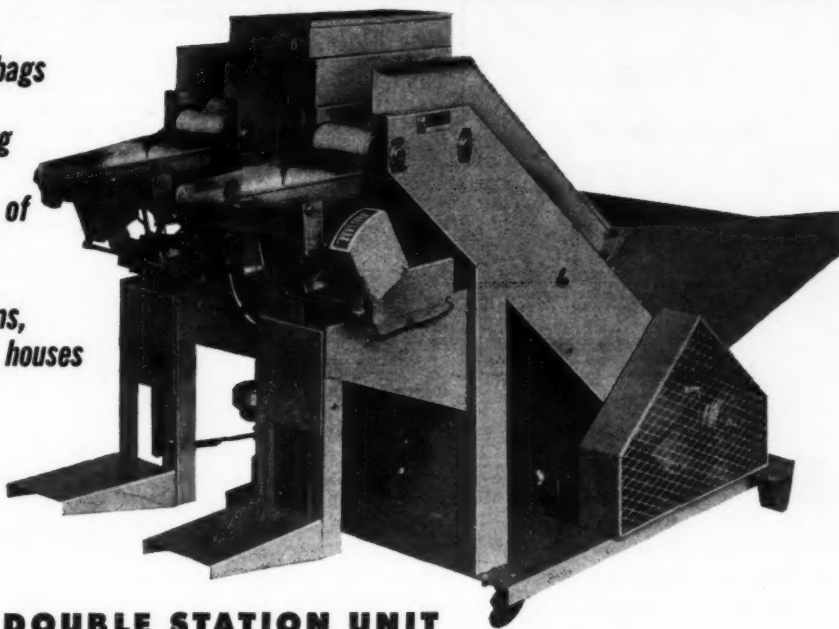
Automatically weighs as it bags

Fills mesh, paper or poly bag

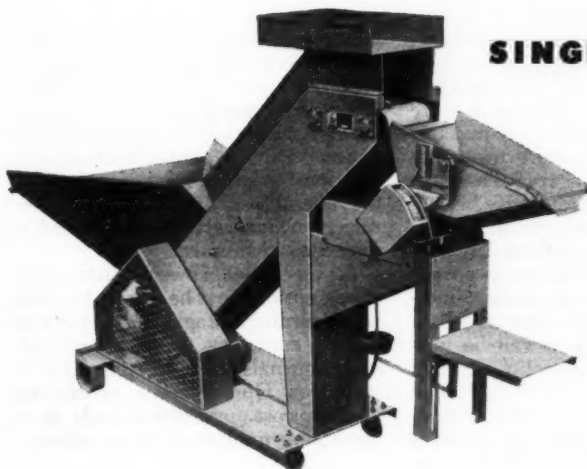
*One operator does the work of
three manual packers*

*Easily moved, ideal for chains,
supermarkets, wholesale houses*

*Bags 5 to 8 five-pound
bags per minute—
4 to 8 ten-pound
bags—3 to 6 fifteen-
pound bags*



DOUBLE STATION UNIT



SINGLE STATION UNIT

Here is a compact precision built bagger for all of your prepackaging needs. Both the single and double station units are completely automatic. Micro-switch controls stop Bagger when preset weight is reached. Operator tilts hopper to fill bags. Hopper automatically refills to correct weight when released. With the double station bagger, one hopper is always filled while the other is being emptied. Bagger handles most all types of produce. A special filling head is available for citrus. Write now for literature and price.

Putting Ideas to Work



**FOOD MACHINERY AND CHEMICAL
CORPORATION
Florida Division**

General Sales Office—LAKELAND, FLORIDA
Plants: LAKELAND, FLORIDA—WOODSTOCK, VIRGINIA

B 58-1

FLORIDA DIVISION, FOOD MACHINERY AND CHEMICAL CORP.
P. O. BOX 1718, LAKELAND, FLORIDA

Gentlemen: Please send me details on FMC Baggers.

Name

Company

Address RFD No.

City State

**Spray
25 ACRES
per hour!**



80 FT. SWATH

**SAVE UP TO 40%
on row crop spraying**

Rolls the spray around and under. Covers every part of every plant.

- Fewer trips through field.
- Less compaction of soil.
- Far less refilling — spend most of your field time spraying.
- No drip — save up to 20% on chemical costs.
- Cover the crop so fast the infestation does not have a chance to spread.
- One-man operation.

\$1395 AND UP

**use your old
tank or trailer.**



Heavy duty
Wisconsin engines
up to 56 HP.

**Widest range of sizes and
types of proven attachments.**

Your choice:

- (1) Complete row crop air sprayer, with pump and engine, but without tank and trailer. 4 sizes. Average time to attach tank and trailer is 8 hours.
- (2) Or a blower attachment to your old high pressure sprayer that uses the old pump. 3 sizes.

Write for FREE folder

"What You Should Know About Air Carrier Spraying of Row Crops," and Besler catalogs.

Dept. AV-3

Please send me your folders on row crop air carrier spraying.

Name _____

Address _____

Farmer _____ Student _____ Other _____

Number of acres _____ Types of crops _____

**BESLER
CORPORATION**

4053 Harlan Street
Emeryville,
Oakland 8, Calif.

Distributors: 419 North Cedar St. Lansing, Michigan

As It Looks To Me

By **JOHN CAREW**
Michigan State University

TWO successful farmers were asked what kind of help they wanted from their agricultural college.

"I want a straight forward answer, with no ifs, ands, and buts," said one man. "When I ask for help I want the specialist to tell me exactly what he thinks I should do."

"Give me the principles—the reasons for and against—the alternatives," said the other, "and I'll make my own decisions."

Both these views have support among vegetable growers. More often than not, research and extension workers are criticized for "beating around the bush" or "riding the fence." Occasionally, the criticism is justified; some men can't give you the time of day without qualifying it. Others use words to smokescreen their ignorance.



Sell or Store?

But there is sound defense for the reluctance many extension and research men have in giving straight yes and no or this and that answers. Take the question, "Should I store my potatoes or sell them now?" If you said *store* and every grower did, your advice would be poor. The same would be true if you said *sell*.

"Should I spray my cucumbers before come-up with dieldrin?" "Can I skip the next maneb spray on my tomatoes?" These and similar questions really have no answers—only opinions. And opinions can be misleading when there is so little control over climate.

As vegetable farms decline in number and farm size goes up, growers will be increasingly interested in principles. A steady stream of seed, fertilizer, chemical, and package company representatives will be knocking at their doors with answers. The job will be to distinguish truth from salesmanship.

Keep Up-to-date

The published proceedings of the American Society for Horticultural Science offer vegetable growers one of the best means of keeping abreast of new principles in production and handling.

Volume 70 (1957), for example, contains 39 scientific articles on fruit,

25 on vegetables, 11 on flowers, and a register of new fruit and nut varieties. Some articles relate to research techniques and have more interest to scientists than producers. Most, however, report progress on a specific problem in growing or storing a crop.

For example, two California workers, Lingle and Holmberg, describe zinc deficiency in sweet corn and present evidence that the trouble can be corrected by soil or foliar applications of several sources of zinc.

Only 1/6 pound of 2,4-D to the acre when the first cluster was in bloom delayed maturity of tomatoes, but did not reduce the total yield. Rollins and Taylor, in Illinois, found, on the other hand, that the same rate three weeks later at full bloom cut yields almost 4 tons.

Putting Science to Work

Over-fertilizing is a common problem in greenhouses; soluble salts accumulate and cause leaf-burn or stunting of many vegetables. Fertilizer materials differ in their soluble salts effect. Smith and Warren, of Purdue University, compared different materials and found that phosphate fertilizers are preferred over sulfate fertilizers, which in turn are preferred over chloride fertilizers. They recommend that only high analysis fertilizers be used in the greenhouse. Sparring use of these starter solution-type fertilizers is safer than the liberal use of lower grade fertilizers which carry a heavy load of unneeded chemicals.

A vegetable grower's success depends not on what he knows but what he is learning. Magazines like *AMERICAN VEGETABLE GROWER* and technical journals like the *American Society for Hort Science* proceedings are low-cost, productive tools in an increasing number of farm offices.

Outstanding Chemicals

Dieldrin appears to be one of the best means of controlling asparagus and cucumber beetles. Applied to the soil just before come-up on asparagus, cucumbers, and melons, it has given excellent control of beetles and other pests far into the season. Kill apparently comes when the insects move into the warmer soil at night. Similarly, maneb has been outstanding for tomato disease control. PCNB, commonly sold as Terraclor, has attracted favorable attention as a clubroot control for cabbage and cauliflower.

THE END.

FEED PEOPLE—NOT PESTS!

Kill

INSECTS

DISEASE

NEMATODES

WEEDS



These Exclusive Niagara Formulations Help Grow Bumper Crops



BEDRENCH

A new effective seedbed drench. Controls weeds, insects, nematodes and damping off. For vegetables, tobacco, flowers and nursery beds.

NIACIDE Z

A potent new Niagara organic fungicide. Widely used throughout tomato growing areas for the control of anthracnose, as well as early blight, septoria and certain minor diseases.

CHLORO IPC WEED KILLER

Provides pre-emergence weed control for snap and lima beans, lettuce, peas, onions, spinach and others. Post-emergence on onions also. Liquid or granular.

C-O-C-S FUNGICIDE

This natural copper fungicide is the old established favorite dust or spray of thousands of growers. Effectively controls blight, mildew, leaf spot.

THIODAN

An important new Niagara discovery. Outstanding for potato insect control. Controls aphids, flea beetle, Colorado potato beetle and potato leaf hoppers.

NEW SPRAY AND DUST GUIDE

Write for this informative guide. Tells you what materials to use, when and where for insect, disease and weed control.



Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION Niagara Chemical Division

MIDDLEPORT, N.Y., RICHMOND, CALIF., JACKSONVILLE, FLA., WYOMING, ILL.,
NEW ORLEANS, LA., AYER, MASS., HARLINGEN, TEXAS, YAKIMA, WASH.,
GREENVILLE, MISS.

Canadian Associate: NIAGARA BRAND CHEMICALS, LTD., BURLINGTON, ONT.

Proved IN THE FIELD
25% to 50% Greater Yield & Quality
CAMPBELL'S GRO-GREEN
 ... with Foliage DIETENE
 ... with Soil DIETENE
LIQUID FERTILIZER
 & Nitrogen Nutrient Concentrates
 Chelated Iron & Trace Elements
Better Results, More Profit ... with less work!



In all parts of the country, farmers, seedsmen, growers and ranchmen are using CAMPBELL'S GRO-GREEN ... and getting immediate improvement in yield, quality and profit per acre. Less Labor, Less Cost. You apply GRO-GREEN easily, without waste, using regular sprayer or irrigation equipment. Use with Planter attachments or broadcast. Gives plants a balanced diet, has all necessary growth elements, rapid penetration, quick results. One test—on your own fields, crops—will convince! A formula for every need!

In 5, 30 and 90 Gal. sizes — also crystal form, and small sizes for home use.



Easy to use! May also be mixed with insecticides, fungicides. Saves Labor, Saves Cost!

Write for FREE SAMPLE! Test GRO-GREEN ... Watch it work!
H. D. CAMPBELL CO.
 Farm Products Div.
 Rochelle, Ill. PH: Rochelle 440

YOU CAN DEPEND ON

MILLER

starter solutions

*** VHPF Soluble Fertilizer**
 Reduces wilting, develops strong roots. Ideal starter for plants—6-25-15 analysis. Can be applied with insecticides.

NUTRI-LEAF "60"
 Feeds plants quickly through leaves. Compatible with spray materials. Includes chelated trace elements—excellent for transplants.

FOR INFORMATION SEE YOUR MILLER REPRESENTATIVE OR WRITE—
MILLER CHEMICAL AND FERTILIZER CORPORATION
 Baltimore 18, Maryland

Prevent Transplanting Shock— USE STARTER SOLUTIONS

Your plants will get off to a good start and you will get better stands, higher yields

By JOHN A. COX and LLOYD G. JONES

Louisiana State University

COMMERCIAL vegetable growers are learning that starter solutions stimulate rapid growth of young plants and help to promote earliness, better stands, and higher yields. Starter solutions are especially beneficial when applied to plants as they are moved to the field from the cold frame, hotbed or greenhouse.

In many sections of the country, greenhouse operators are also using starter solutions as a supplement to other fertilizers to bring their crops into rapid and profitable production.

Young vegetable plants undergo a certain amount of "shock" when transplanted to the field, regardless of size, condition of the plant, or method of transplanting.

Strong winds cause the plants to dry out rapidly, resulting in poor plant stands. Even when moisture is plentiful and the soil is in good condition, plants are "shocked" to some extent when suddenly taken from cold frames or hotbeds and placed far apart on rows in the field.

Growers often find it necessary to set small, tender plants in the field when weather conditions are unfavorable. It is frequently impossible to set plants under ideal conditions. Once the soil is properly prepared,

rain may fall in excess or insufficient quantities for optimum transplanting conditions.

The time element also enters the picture. When a grower has the time for transplanting, the soil might be too dry and the temperature too high.

Under these conditions, starter solution will help plants overcome the shock of being transplanted to the field. It stimulates root growth and gets the plants off to a fast start. Because of the increased root system, the plants are able to penetrate and exploit the fertilized area as well as the whole soil mass more rapidly and thoroughly.

In Louisiana, the response to starter solution has been greatest on infertile soils where the regular fertilizer application was light to moderate, or was deeply placed. On sweetpotatoes where the conventional fertilizer was placed deep in the row, a starter solution high in phosphorus content and low in nitrogen and potash has increased yields. The starter material (a dry salt) was applied at the rate of 3 pounds in 50 gallons of water and 1/2 pint of the solution per plant.

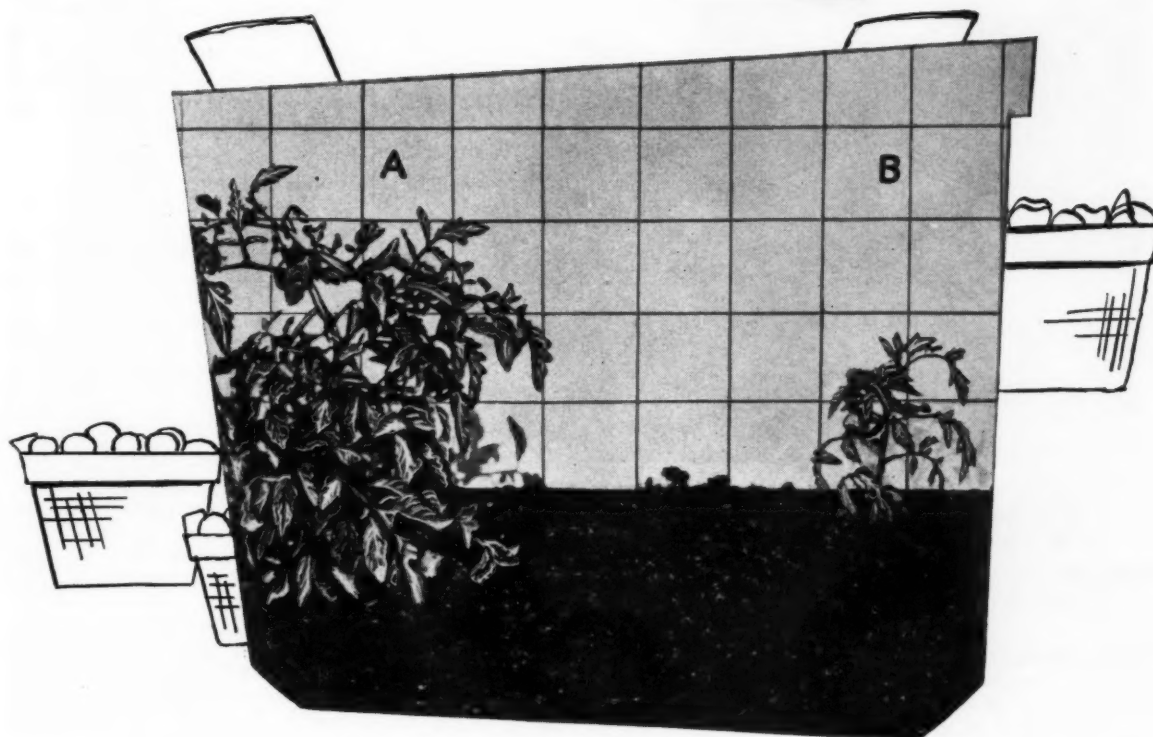
Other crops showing a response to starter were strawberries, sweet

COMMERCIAL STARTER SOLUTIONS

Trade Name	Analysis	Source
Group I—High Phosphate Analysis		
Take-Held	10-52-17	Victor Chemical Works, 155 N. Wacker Drive, Chicago 6, Ill.
Armour's All-Soluble Plant Food	15-52-9	Armour Fertilizer Works, Hurt Bldg., Atlanta, Ga.
Start-Rite	10-52-8	Davison Chemical Co., Baltimore, Md.
Boare	10-50-10	Swift & Co., Union Stock Yards, Chicago 9, Ill.
Ammono-phos	11-48-0	Olin Mathieson Chemical Corp., Little Rock, Ark.
Group II—Medium Phosphate Analysis		
Kap Co. No. 1	15-30-15	The Summers Fertilizer Co., Inc., McKeesport, Pa.
Plant Prod	15-30-15	Plant Products Corp., Kennedy Ave., Blue Point, L.I., N.Y.
Nu Way	15-30-15	Plant Food Co., Strettor, Ill.
Dirco	15-30-15	Marion Chemical Co., Marion, Ohio.
Ammono-phos	10-30-10	Olin Mathieson Chemical Corp., Little Rock, Ark.
VHPF	6-25-15	Miller Chemical & Fert. Corp., 2226 N. Howard St., Baltimore, Md.
Instant Vigoro	20-10-15	Swift & Co., Union Stock Yards, Chicago 9, Ill.
Ferti-Liquid	10-20-10	Clover Chemical Co., Box 10865, Pittsburgh 6, Pa.
Ammono-phos	10-20-10	Olin Mathieson Chemical Corp., Little Rock, Ark.
Group III—Equal Nitrogen, Phosphorus, and Potassium Analysis		
Folium	20-20-20	Monsanto Chem. Co., 1700 S. 2nd St., St. Louis 4, Mo.
Nurish	20-20-20	Naco Fertilizer Co., Findlay, Ohio.
Gro-Stuff	20-20-20	American Chemical Paint Co., Ambler, Pa.
Kap Co. No. 3	20-20-20	Kelly Agricultural Products, McKeesport, Pa.
Nutri-Leaf	20-20-20	Miller Chemical & Fertilizer Corp., 2226 N. Howard St., Baltimore, Md.
Dupont Soluble Plant Food	19-22-16	E. I. du Pont de Nemours & Co., Wilmington 98, Del.
Ra-Pid-Gro	23-21-17	Ra-Pid-Gro Corp., P.O. Box 13, Dansville, N.Y.
Liqua-Leaf	10-10-8 (liquid)	Miller Chemical & Fertilizer Corp., 2226 N. Howard St., Baltimore Md.

AMERICAN VEGETABLE GROWER

to get your produce to market first...



give your transplants a good toe hold with **TAKE-HOLD (10-52-17)**

Tomatoes, cauliflower, cabbage, sweet potatoes, peppers and other vegetables grow *faster...yield more...* when you treat them with "Take-Hold" (10-52-17) at set-out time.

Photo above taken by the N.Y. Agricultural Experiment Station 3 weeks after transplanting tomatoes shows how plants take hold when treated with "Take-Hold." Plant A was treated with $\frac{1}{2}$ pint of "Take-Hold" solution; plant B received $\frac{1}{2}$ pint of water *only* at set-out time.

Only "Take-Hold" Gives You These Head-Start Advantages

1. Plants get "set" faster...resume growth quicker...help you get crops to market in advance of regular season.
2. Fewer plant replacements...savings on labor alone should pay for "Take-Hold."
3. Plants mature earlier...com-

mand in-advance-of-season prices.

4. Plants bear longer...yield more.
5. Easy and economical to use...completely and instantly soluble (3 pounds to 50 gallons of water); no sludge to clog equipment; no odor.

Tomato yields—average 4 varieties Courtesy Michigan State University

Nutrient	Early Tons/A	Early Tons/A Gain	Total Tons/A	Total Tons/A Gain
Water Only	7.1	..	16.4	..
"Take-Hold"	11.6	4.5	21.1	4.7

See the difference in yield
Order TAKE-HOLD (10-52-17) now!

Write to:

VICTOR CHEMICAL WORKS

155 N. Wacker Drive
Chicago 6, Illinois

HERE'S REAL VALUE in Power for Vegetable Growing



However you measure it, the thrifty, low-cost Model B is the "buy of the year" for truck and specialty-crop farming.

POWER? The Model B delivers full 2-plow power to handle the most demanding jobs in your operation. Battery ignition system assures steady engine power at all speeds.

CONVENIENCE? The Model B — long known for easy handling — now offers the added timesaving convenience of SNAP-COUPLER hitch. The new 2-bottom plow, 2-row bedder, 2-row drill planter, and field cultivators are all mounted tools, attached minute-quick with SNAP-COUPLER hitch.

VERSATILITY? The Model B can be equipped with just the right tool for any job, including a selection of single-row cultivators, mower, rake, ROTO-BALER and various machines for harvesting grain, seed and forage.

ECONOMY? You can own the Model B for a price you can't match anywhere. Low operating cost and long life . . . along with its many timesaving features . . . make the Model B an unsurpassed tractor value for vegetable growers.

Own a new Model B Tractor — and pocket the savings. See your Allis-Chalmers dealer . . . soon!

ALLIS-CHALMERS, FARM EQUIPMENT DIVISION, MILWAUKEE 1, WISCONSIN

SNAP-COUPLER and ROTO-BALER are Allis-Chalmers trademarks.



Model B with new 2-bottom plow. Hydraulically lifted and lowered. SNAP-COUPLER hitch.

ALLIS-CHALMERS



pepper, cabbage, and tomato transplants.

More specific information is being sought through additional tests concerning the range of plants which may respond to this type of fertilizer application, the appropriate amount and concentration of the solution to be applied to each plant, and the effects that this method of fertilizer application may have on the regular fertilizer application and vice versa.

Water Soluble

Many of the starter fertilizers now in commercial use are highly water soluble. In fact, some of these materials are sold as liquids, while others are available as dry salts. Because of their high solubility, they dissolve rapidly and completely upon being placed in water and are instantly available for absorption by plant roots. The solubility of these materials is also important insofar as ease of handling in transplanting machines is concerned. No sedimentation occurs in the transplanter tank, nor is there any clogging of hoses leading from the tank to the planter shoe.

In most cases, a starter solution high in soluble phosphorus content and relatively low in nitrogen and potassium contents will give the best results. There is some indication, however, that some crops may benefit more from having more nearly equal amounts of nitrogen, phosphorus, and potassium contents in the starter.

Other factors which may have a bearing on the best type of starter to use on a given crop in a certain location is the native fertility level of the soil and the type of fertilizer used in addition to the starter fertilizer, as well as the placement of the fertilizer. If the soil is naturally high in available phosphorus content, then little response can be expected from the use of a high-phosphate starter solution. Also, if a heavy rate of fertilizer is shallowly placed in the row, it is probable that, when the transplants are placed in it, the salt concentration may already be high enough to cause "fertilizer burn."

Plain Water

Under these circumstances, application of starter solution will be of little benefit. In fact, it would be better to use plain water. A more desirable practice would be to place the conventional fertilizer deep enough to avoid contact with the roots of the transplants at planting and apply a starter solution. **THE END.**

AMERICAN VEGETABLE GROWER

trans-
is be-
al tests
plants
type of
appro-
tion of
o each
at this
on may
appli-

ers now
y water
se ma-
while
salts.
y, they
y upon
are in-
ion by
f these
insofar
lanting
dimen-
planter
ing of
to the

olution
content
en and
he best
cation,
bene-
nearly
phos-
ents in

have a
starter
certain
y level
ertilizer
er fer-
ment of
turally
s con-
be ex-
a-phos-
b, if a
llovely-
le that,
aced in
ay al-
e "fer-

appli-
be of
uld be
a more
o place
deep
ie roots
g and
E END.
GROWER



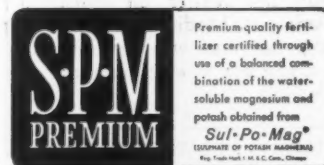
Magnesium Deficient Cabbage



Magnesium Deficient Tomato

before it's
TOO LATE for TOP PROFITS!
specify *Sul-Po-Mag*[®]
in your premium mixed fertilizer

With 90% of many vegetable-growing areas reported as magnesium-deficient, crop losses like those shown above may be only a heavy rainfall away. *Before* magnesium deficiency can strike—*before it's TOO LATE for TOP PROFITS*—insure your vegetables an adequate supply of magnesium with premium mixed fertilizer containing *Sul-Po-Mag*[®]. Supply fast-acting, readily-available, water-soluble magnesium and premium sulphate of potash with *Sul-Po-Mag*, also called SPM. It's in granular form to lessen leaching. Take no chances on magnesium deficiency losses. Ask your dealer for premium mixed fertilizer with *Sul-Po-Mag*.



Premium quality fertilizer certified through use of a balanced combination of the water-soluble magnesium and potash obtained from *Sul-Po-Mag*[®] (Sulphate of Potash Magnesia) Reg. Trad. Mark U. S. Pat. Off., Chicago

**This Seal Guarantees
Fertilizer to Contain**

Sul-Po-Mag

Water-Soluble Double Sulphate of Potash-Magnesia
(K₂SO₄ • 2MgSO₄) 22% K₂O—18% MgO

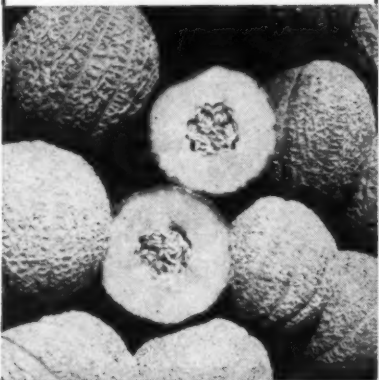
INTERNATIONAL MINERALS & CHEMICAL CORPORATION
POTASH DIVISION 20 N. WACKER DRIVE, CHICAGO 6, ILL.

HARRIS SEEDS



Harris' NORTH STAR Fine, Big Ears for the Early Market

Bred for early planting and famous for its ability to make big crops under difficult conditions . . . Handsome, well-filled, 7 inch ear, excellent quality . . . Large, thick, dark green husks.



Harris' HARVEST QUEEN The Leading Melon for Market and Shipping

Thick, firm flesh, choice flavor and tough rind make Harvest Queen the leader on many markets . . . Medium size, big yields, fusarium wilt resistant . . . Grow our true originator's strain.

HARRIS FLOWER SEED

Just a reminder that we are out in front in the production of hybrid petunias which are proving to be money makers for plant growers.

WRITE FOR THE FREE
MARKET GARDENERS
& FLORISTS
WHOLESALE PRICE LIST

JOSEPH HARRIS CO., INC.
76 Moreton Farm Rochester 11, N.Y.

ATOMIC AGE HARVESTING

Colossal operation of New York grower began with one truck

THE harvesting operation of Frank Rozanski, Perry, N. Y., might be described as the atomic age version of the harvesting crews employed in grandfather's day.

Last year, with the aid of machines, 5100 acres or 18,000 tons of sweet corn were picked, 3000 acres of green peas and 100 acres of spinach were cut and loaded, and 150 acres of beets as well as 120 acres of lima beans were topped.

Rated the largest individual owner of vegetable harvesting equipment in the country, Rozanski operates 15 Porterway machines that mow and load green peas, 12 sweet corn pickers, and four beet toppers.

Four radio-equipped service trucks and a machine shop are required to operate and maintain this vast array of equipment. The machinery is valued at a quarter million dollars.

This colossal harvesting began in 1937 with the organization of crews of men and women to pick snap beans and sweet corn. At that time, Rozanski's only equipment was an old truck.

Small Beginning

Machine harvesting began in 1952. Each year as he gained experience and trained operators, Rozanski bought more machines. He has traveled extensively to observe harvest equipment in operation, and has collaborated with research engineers in the improvement of the machines. Manufacturers consider him an expert in these matters and frequently consult him about changes of design.

Custom Harvesting

Rozanski does not do all his harvesting at home. Each year he cuts several hundred acres of peas in southern Pennsylvania for a western New York processor, and has taken his equipment as far away as Florida and Texas.

He is proud of the business he has built and the staff he has trained. And perhaps he is even more pleased with the reputation he has earned for good performance and the fact that because of more efficient operation he was able to do a better job of harvesting last year at no more cost to the grower than when he bought the first machines in 1952.—*Wm. Stempfle, Sec'y, N.Y. Canning Crop Growers Co-operative.*

GREATER YIELDS . . . GREATER PROFITS WITH *Simplex* SOIL TEST OUTFITS

ELIMINATE TARDY TEST REPORTS

NO SPECIAL TRAINING REQUIRED

COMPLETE OUTFIT

Everything necessary to make tests for 14 plant growth factors; plus tissue tests for Nitrates, Phosphorus and Potassium.



\$54.50 F.O.B. NORWALK

JUNIOR OUTFIT

Everything necessary to make 100 to 300 tests for the following plant growth factors: Nitrates, Phosphorus, Potassium, Calcium, Ammonium, Acidity; plus tissue tests for Potassium.



Nitrates, Phosphorus and Potassium
\$36.50 F.O.B. NORWALK

FARM OUTFIT

100 tests for the following five growth factors: Nitrates, Phosphorus, Potassium, Ammonium, Acidity; plus tissue tests for Nitrates, Phosphorus and Potassium.



\$28.50 F.O.B. NORWALK

Simplex Soil Test Outfits are not merely soil testers, they are combination Soil and Tissue Test Outfits based on scientific methods devised at Michigan State College by Dr. Charles H. Spurway.

Write for free Simplex literature before purchasing any soil testing equipment. You will be glad you did!

**The EDWARDS
LABORATORY**
P O Box 318E • NORWALK, OHIO

VEGETABLE PLANTS

Cabbage, Onions, Tomatoes, Pepper, Collards, Brussels Sprouts, Cauliflower, Broccoli, and Eggplants

Wholesale Prices

1,000	\$ 3.00
5,000	13.75
10,000	25.00

Prices are f.o.b. Jacksonville, Texas. Best strains of leading varieties. Shipments catering to market gardeners' demands. Write for free price list containing description of varieties grown and also prices of extra large plants.

TEXAS PLANT FARMS
Jacksonville, Texas

AMERICAN VEGETABLE GROWER

GREENHOUSE CROPS

POLLINATION PROBLEMS

Here are ways to overcome poor fruit-set in tomatoes

By I. C. HOFFMAN

Ohio Agricultural Experiment Station

UNDER natural conditions in the field or garden, shaking of tomato flowers by winds and occasional visits by insects, pollen is dislodged from the stamens and pollination is completed.

In the greenhouse, however, tomato plants are protected from winds and other agents, so it is necessary to bring about pollination by other means.

This process is now commonly done with electric vibrators which are carried by hand and powered by common 6-volt batteries, or long rubber-covered extension cords attached to AC current outlets conveniently located in the greenhouse. The vibrators are held in such a position that the needles strike a series of sharp blows on the tops of the flower clusters, causing the



Electric vibrator used to release pollen from tomato blossoms. Note position of pollinator needles.

flowers to move up and down in a cloud of released pollen.

Formerly, pollination was done in the greenhouse by tapping the clusters with a light stick or tapping the vines opposite the clusters with a short piece of rubber hose, but these methods are not as effective as the vibrators. The more seeds formed within a tomato, the more symmetrical its shape will be. Incomplete pollination results in misshapen fruit.

The mechanics of pollination have now been well worked out, but there are still a number of problems which interfere with fruit-set. Among these are poor light during the short



Swift's Plant Foods trigger new Yield Energy



Vegetable cropland takes on new power to produce when it's fed with Swift's Plant Foods. The extra growth elements in these Specialized Crop Makers trigger new yield energy from the soil . . . actually make each acre of land worth more to you.

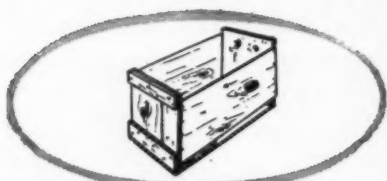
Swift's Plant Foods are made by the exclusive FLO-FUSION process which packs each particle with fertility to assure balanced feeding of your crop. The plant food elements are chemically-hitched so they can't shake out or separate.

There is a Swift's Plant Food that is just right for your crop. Your Swift Agent or Dealer will be glad to help you plan a soil fertility program using Vigoro Commercial Grower, Brimm, Blenn or Red Steer. Contact your nearest Swift office.

AGRICULTURAL CHEMICAL DIVISION • CHICAGO 9, ILLINOIS

Swift

To Serve Your Farm and Family Better



Longer Life...for picking boxes and baskets



One quick, inexpensive dip in Cellu-san saves you money 5 ways:

- Wood won't become brittle and break so easily—stays "alive" and resilient.
- Containers stay cleaner, more sanitary—resist penetration by fruit juices.
- Crop contamination from mold is controlled, assuring much less waste.
- Tare weights are stabilized through far less moisture pick-up.
- Rot will not cause decay of wood fibers nor loosening of fasteners.

Write today for an 8-page brochure about Cellu-san—the most widely used wood preservative in the food industry.

Cellu-san

Chemical Products Division,
Dartmouth Incorporated.

Address: 1 Pine Street, Simsbury, Conn.,
or P.O. Box 1422, Palo Alto, California.

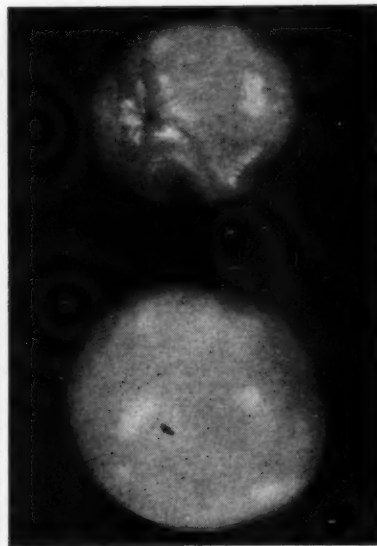
Please send me illustrated literature
about longer service life for harvesting
containers.

Name _____

Company _____

Address _____

City _____ State _____



These two tomatoes show the results of poor (top) and well-pollinated fruits.

dark days of winter, too much nitrate nitrogen in the soil in dark weather, over-watering with too high temperature in winter, and excessively high temperature in summer.

Soil Nitrate

In the winter during short days with poor light, tomato plants manufacture so little carbohydrate material that normal flowers with good pollen may not be formed. When this happens, fruit will not set. It has been found that by holding the young plants in pots for 8 to 10 weeks, more satisfactory flowers can be produced.

This period of time is usually enough to use up most of the fertilizer nutrients in the pot soil, and to cause a mild deficiency, especially in nitrate nitrogen. Flowers on such plants usually have viable pollen and will set fruit quite easily after the plants have been placed in the greenhouse beds.

Too much nitrate nitrogen in the soil during the winter causes tomato plants to grow so fast they become soft and vegetative. Flowers often do not open fully and do not have viable pollen. Such flowers do not set fruit readily. The remedy is to start with soil that is quite low in available nitrate nitrogen in which to raise the plants and to hold them in the pots until the first cluster of buds is well formed.

Over-watering

Over-watering the plants under winter conditions will often produce soft plants, especially if temperatures are kept high and if there is a high nitrate content in the soil.



LIGHT and EASY TO CARRY
Put it where you need it!

STANDARD LITEWATE sectional roller conveyors are ideal for "spot" loading and unloading jobs — can be quickly, easily moved wherever desired. They handle all types of commodities up to 80 lbs. and operate at grades as little as $\frac{1}{4}$ in. to $\frac{3}{4}$ in. per ft. Available in 10-ft. and 5-ft. straight sections and 90° and 45° curves; with interchangeable spacing of rollers on $1\frac{1}{2}$ in. through 12 in. centers. Write Dept. S-3, for Bulletin 63-B.

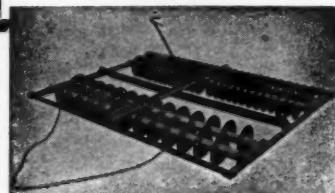
STANDARD CONVEYOR COMPANY

General Offices: North St. Paul 9, Minn.

Sales and Service in Principal Cities

Standard
GRAVITY & POWER
CONVEYORS

SIMONS Pulverizing and Smoothing HARROW



For a really fine, smooth Seed Bed Here's the Harrow that can increase crop yield so much that it can pay for itself in one season.

It's a harrow, roller and leveler combined that will give you a really fine, smooth seed bed. And the Simons Harrow is built for high speed and hard use.

It's adjustable to exactly suit your soil. Available in 4-5-6-7-8-9-10-11-12 ft. widths.

Consult your Local Dealer

S. S. SIMONS

Machine Works

4222 STATE ROAD
CORNWELL HEIGHTS, PA.

AMERICAN VEGETABLE GROWER

Water should be kept but keep prevent t This may once a wee weather co Night held arou ventilation and cloud should be L some reason growing to perature m for a week held on the again und plants sho moved occa from grow the pots.

High Temperature

Extreme midsummer which some lination. H 90 to 100° formation of them to be viable poll and fruit-se

The gre lessen this plants durin with water rates, it coo and conser hydrate m better flow and fruit-se



NEW
A new tomato v min A and disti by F. W. Quack both of Purdue U orange on outsid with orange-red 1 1/2 to 2 times requirement. Par slag varieties in fruit resembles R same season. Pu Improvement Ass limited amount of tion of small pack

MARCH, 1958

Water should be applied sparingly, but keep the soil damp enough to prevent the plants from wilting. This may mean watering the pots once a week or 10 days, according to weather conditions.

Night temperatures should be held around 60-70° F., with some ventilation on bright days. On dull and cloudy days the temperatures should be held around 65° F. If for some reason the plants should be growing too rapidly, the night temperature may be lowered to 56° F. for a week or two and the plants held on the "dry side" until they are again under control. The potted plants should be picked up and moved occasionally to keep the roots from growing into the soil beneath the pots.

High Temperatures

Extremely high temperatures in midsummer pose another problem which sometimes hinders proper pollination. High temperatures, often 90 to 100° F. or higher, prevent formation of carbohydrates or cause them to be used too rapidly so that viable pollen cannot be produced and fruit-set is prevented.

The greenhouse manager can lessen this effect by syringing the plants during the hot part of the day with water. As the water evaporates, it cools the plants and the air and conserves considerable carbohydrate material. This produces better flowers with normal pollen, and fruit-set is restored. THE END.



NEW TOMATO VARIETY

A new tomato variety, **CARO-RED**, rich in vitamin A and distinct in color, has been developed by F. W. Quackenbush (left) and M. L. Tomes, both of Purdue University. New tomato is more orange on outside than usual garden variety, with orange-red flesh. Single tomato supplies 1 1/2 to 2 times adult minimum daily vitamin A requirement. Parentage included standard canning varieties Indiana Baltimore and Rutgers. Fruit resembles Rutgers, except for color; matures same season. Purdue Agricultural Alumni Seed Improvement Association, Lafayette, Ind., has limited amount of seed for immediate distribution of small packet lots.

MARCH, 1958



Unretouched picture of Roeland de Wilde III and his ingenious Vapam® applicator at work at the Rhodo-Lake Nurseries, Shiloh, N.J.

Vapam Soil Fumigant Must Be Good To Inspire A Rig Like This

Why else would anyone take a perfectly good rototiller and convert it into a special rig for applying Vapam?

Simply because this very *special* soil fumigant wipes out sub-surface parasites so effectively — at such reasonable costs per acre.

In nurseries and new orchard sites, in commercial seed beds and large acreage planted to vegetables, Vapam controls weed-seeds, fungi, nematodes, club root and other soil-borne diseases. It penetrates the soil deeply . . . leaves it *clean* as a whistle.

Vegetables, ornamentals, nursery stock and young fruit trees grow *stronger* in clean soil . . . yield richer harvests, bigger profits.

®Vapam is Stauffer Chemical Company's registered trade mark for sodium methyl dithiocarbamate soil fumigant.

Commercial growers can apply Vapam with a rototiller, bedder or injector. You can even introduce Vapam into most irrigation systems.

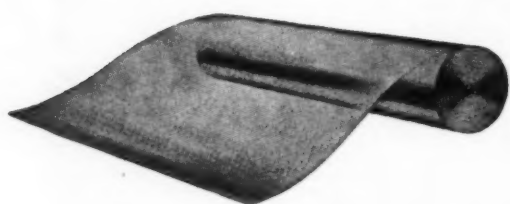
Vapam is soluble in water, requires no ground covers or other special equipment.

See your local dealer today. He'll tell you when to apply Vapam for best results. Also ask him about Stauffer's complete line of farm chemicals, including Trithion®, and Captan.



New York • San Francisco • Houston • Omaha • Los Angeles • Tampa
North Portland • Weslaco • Lubbock • Harvey • North Little Rock

POLYETHYLENE Transparent FILM



YOH & HOOKER
BOX 1165 • YOUNGSTOWN, OHIO

Sizes and Prices

Our Polyethylene film is .004 mil. thick and this is medium weight, and cost considered, is the most satisfactory.

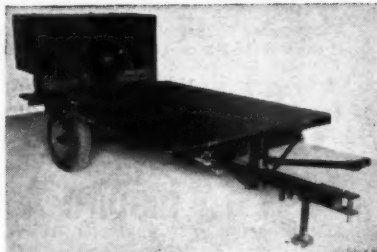
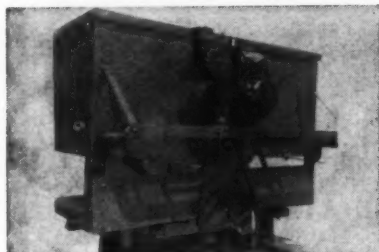
3 ft. wide by 100 ft. long	\$6.00 a roll
4 ft. wide by 100 ft. long	\$8.00 a roll
6 ft. wide by 100 ft. long	\$12.00 a roll
8 ft. wide by 100 ft. long	\$16.00 a roll
10½ ft. wide by 100 ft. long	\$21.00 a roll
20 ft. wide by 100 ft. long	\$40.00 a roll
6 Rolls to 9 Rolls	Deduct 20%
10 Rolls or More	Deduct 25%

Big Sample Bargain

Big useable sample piece 10 ft. long by 3 ft. wide. Send \$1.00 cash, check or stamps for this big sample by mail, postpaid

PROVED and APPROVED BY USDA

Sows—Fertilizes—Applies Insecticides Accurately, Quickly



This is the spreader the U.S.D.A. is using for the application of granular insecticides. Chosen because of uniformity of spread—can be adjusted for 5 lbs. to 2000 lbs. per acre. Spreads 15-20 ft. on 30-40 mesh material. Will spread up to 40 ft. on heavier pelleted materials. Available in three models.

Used by State and National Agricultural Departments for Application of granular insecticides

Write for Free Folder Today

SKIBBE SEED & FERTILIZER SPREADER, SODUS, MICH.

THERE IS A DIFFERENCE IN TRANSPLANTERS AND YOU CAN SEE THE DIFFERENCE IN THE HOLLAND

Only the Holland Automatically plants, spaces and waters your crop with the patented all-rubber plant holder. Only the Holland has the NEW "Start-rite" water valve. It will PAY you to see the 1958 Holland Before you buy. Why take 2nd best when you can get the original Holland. Plant with it this Spring. Its performance will amaze you. Leaders by over 30 years of experience in building only transplanters. Send for new 1958 12-page catalog of tractor mounted, drawn, self propelled and horse drawn models for vegetables and tobacco.



Since 1927

HOLLAND TRANSPLANTER COMPANY
341 East 7th St. at Fairbanks HOLLAND, MICHIGAN

POTATOES

STABILIZING THE POTATO ECONOMY

It's as simple as A-B-C . . .

IN spite of reduced national potato acreage over the past 20 years, growers are confronted with an economic crisis which is delving deeper into their profits.

Improved growing practices have boosted yields, resulting in capacity- and even over-production for the market. Consumption in the U. S. dropped from 128 pounds per person to 100 from 1940 to 1952. And while carlot sales prices have remained about the same over the past decade, producers have had to absorb rising growing and transportation costs.

Concern over the slump in net returns to growers has prompted Francis P. Pusateri, executive manager, Kern County Potato Growers Association, Bakersfield, Calif., to offer a simple "A-B-C" plan for a stable and profitable national potato economy:

"Acreage planted with USDA acreage goals. Best quality, sold under fundamental marketing procedures. Consumption increased through promotion of nutritional properties."

Profit or Loss

Point "A" entails the individual grower's responsibility to follow government suggestions, which can mean the difference between profit or loss.

If the national potato industry had conformed to 1957 recommendations for planting, supply would have more closely balanced market requirements, Pusateri points out.

The normal national weekly shipment of potatoes has been estimated at 7500 carlot equivalents, to return a parity price. Weekly estimates of national potato supplies by area for a 13-week period, beginning in May, 1957, showed that the total weekly shipment for eight weeks was over 7500.

Of inestimable value to the potato industry, in Pusateri's opinion, would be publication of a monthly inventory situation, in co-operation with the USDA.

Balancing acreage (production) with consumption also depends on co-operation from industries allied with potato producers, says Pusateri. Unthinking suppliers, for example, anxious for sales, may encourage a grower to plant more than he should.

Allied ind market sit each season

Marketing

Elaborat includes th in selling, tributing p

1) Whe ders on eit basis.

2) Avoi ments to l advantage."

3) Avoi major term

4) Size a mium and dise accord

5) Fresh ishable cor supply and informed.

6) Alwa basis, allow declines.

The Mode

Commenc of potato says that ' bring ever- highly ben potatoes in

Turning Pusateri a

higher rail fornia to e truck rates a competi gests consi decreased tinuation e markets w added to h in a price t depressing in nearer

Another out Pusate areas of I Colorado, the past th ties and s tended the potatoes at

As an al that Kern other crops

SEED C

GERMA Calif., marketers o purchased Co., also c nouncement Schoenfeld main's. Th tions of bo solidated a Seed Divisi

MARCH, 1958

Allied industry should analyze the market situation with the grower each season, according to Pusateri.

Marketing Fundamentals

Elaborating on point "B," Pusateri includes the following fundamentals in selling, merchandising, and distributing potatoes:

- 1) Whenever possible, book orders on either a "firm" or "S.A.P." basis.
- 2) Avoid indiscriminate consignments to be handled "for our best advantage."
- 3) Avoid arrival of "rollers" at major terminals.
- 4) Size and grade according to premium and select packs and merchandise accordingly.
- 5) Fresh potatoes are a highly perishable commodity and sensitive to supply and demand factors. Keep informed.
- 6) Always confirm sales on "firm" basis, allowing no protection if price declines.

The Modern Diet

Commenting on the nutritive value of potatoes—point "C"—Pusateri says that "the future will prove and bring ever-widening realization of the highly beneficial nature of white potatoes in the modern diet."

Turning to Kern district growers, Pusateri advises them to compare higher rail freight charges from California to eastern markets with lower truck rates to the same markets from a competitive area (Florida). He suggests consideration of the value of decreased acreage, rather than continuation of supplying for eastern markets where high freight costs, added to high production costs, result in a price that cannot be met, thereby depressing terminal market demands in nearer markets.

Another factor to consider, points out Pusateri, is that in fall storage areas of Maine, Red River Valley, Colorado, and Idaho, improvements the past three years in storage facilities and sprout inhibitors have extended the storage life of late stock potatoes at least 30 to 45 days.

As an alternative, Pusateri suggests that Kern potato producers divert to other crops.

THE END.

SEED COMPANIES MERGE

GERMAIN'S, Inc., Los Angeles, Calif., western producers and marketers of seed and equipment, has purchased Aggeler & Musser Seed Co., also of Los Angeles. The announcement was made by W. R. Schoenfeld, Jr., president of Germain's. The commercial seed operations of both companies will be consolidated as the Aggeler & Musser Seed Division of Germain's.



CHARLESTON GRAY
Watermelon

Plant

BURRELL'S BETTER SEEDS

You'll learn why so many commercial growers use them year after year

America's most unique
descriptive catalog free

D. V. BURRELL SEED GROWERS CO.
Box 150A Rocky Ford, Colorado

GROWERS! READ AMAZING RESULTS OF NEW PATENTED GROWTH STIMULATOR

SEND
FOR
FREE
DATA!

FERTIDYNE®

In Actual Field Trials, One Application of
Fertidyne Increased Crop Yields of:

- POTATOES BY 85%
- STRINGBEANS BY 120%
- CUCUMBERS BY 300%
- STRAWBERRIES BY 69%
- PEAS BY 22%
- CARROTS BY 200%

And Increased Tomato Yields by Almost
9 Tons Per Acre for Less Than 66¢ Per Extra Ton!

In field trial after field trial, the addition of only 1 lb. of Fertidyne per acre has produced almost unbelievable crop yields! This remarkable new growth stimulator has consistently increased by 20% to 300% (depending on soil, moisture, etc.) the yield of tomatoes, stringbeans, potatoes, cucumbers, peppers, etc. as well as grain crops... producing TOP-QUALITY PRODUCE to bring you PREMIUM PRICES in a tough competitive market! Cost to you? Merely \$8 per acre... a tiny, tiny fraction of your enormous extra profit!

WHAT IS FERTIDYNE?

Fertidyne is an organic compound that stimulates the metabolism of soil bacteria, thereby inducing a marked increase in the rate of release of available nutrients in the soil. No special equipment is needed to apply Fertidyne. Just harrow it in as you prepare the soil for planting!

SEND FOR

FREE BOOKLETS NOW!

Many, many more astounding results are detailed in these free brochures. Just check off the ones you're interested in on the order blank below... they're yours without charge!

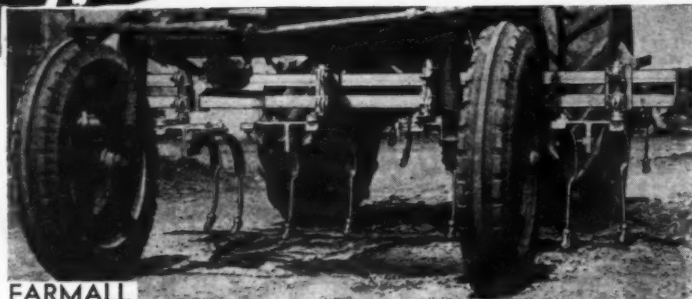
Hundreds of growers have already run their initial trials of Fertidyne and are sending in enthusiastic reports. Commercial demands for Fertidyne already threaten to exceed our production capacity. Therefore, if you would like to witness the spectacular increase in yield and quality that Fertidyne can produce in your own fields the coming growing season, then it is urgent that you send in your reservation for a test quantity now before our available supplies are snapped up by other interested growers.

IBC Research Laboratories, Inc., 16 West 61st St., New York 23, N. Y.
Please send me free Fertidyne booklets checked. Others in preparation.)

- | | |
|---|---|
| <input type="checkbox"/> A New Method of Increasing Soil Fertility | Also send me _____ lbs. of #1 Concentrate Fertidyne (applies at rate of 1 lb./acre) at \$8 per lb. |
| <input type="checkbox"/> Fertidyne Effects on Stringbeans | Total _____ |
| <input type="checkbox"/> Fertidyne Effects on Potatoes | <input type="checkbox"/> I enclose \$ _____ <input type="checkbox"/> Ship C.O.D. <input type="checkbox"/> Bill Me |
| <input type="checkbox"/> Fertidyne Effects on Tomatoes | Name _____ |
| <input type="checkbox"/> Data on Cucumbers, Radishes, Peppers and Oats. | Firm Name _____ |
| | Address _____ City _____ Zone _____ State _____ |

Check The Complete Cultivator MADE FOR YOU!

TRY IT FOR 2 WEEKS AT OUR EXPENSE



FARMALL

Simple Adjustment—Minimum 15" Clearance

- Faster, cleaner cultivation
- Throws no dirt
- Aerates the ground
- Mulches ground deep
- Leaves no ridge
- Quick, easy row adjustment
- Fits any tractor
- Tool bars any length

WRITE OR CALL FOR FURTHER DETAILS

KIRBRO CO.

131 Schley St.
Newark 12, N.J.
Waverly 3-4635

YOUR kind of BASKETS!



Successful growers by thousands have shown that our baskets, boxes, and containers for retail and bulk marketing promote better profit for the vegetable producer.

Product of our complete PLANNED PACKAGING facilities, these marketing specialties are made of fine quality corrugated board, attractively printed in 2 colors. Sizes—2, 4, 8, 12, and 16 quarts. Wood or wire handles. Shipped flat for easy storage. Easy to set up. Write PRODUCE SALES, The Ohio Box-board Co., Rittman, Ohio.

5 SIZES—
wood
or wire
handles



THE OHIO BOXBOARD CO.

PLANTS: Rittman, O. • Youngstown, O. • Cuyahoga Falls, O.
Pittsburgh, Pa. • Fairbanks Containers, Inc., Middletown, O.
Western Containers, Inc., Lockport, N. Y. • Champion Containers, Inc., Plymouth, Mich.

STATE NEWS

Special Report

NEWER VEGETABLE VARIETIES FOR MICHIGAN

THERE is seldom a "best" vegetable variety for all conditions. Growers must usually choose between varieties offering various combinations of earliness, disease resistance, quality, and high yield. Michigan State University research and extension workers evaluate many new varieties each year to determine which are worthy of commercial trial. At the same time, department of horticulture plant breeders are striving to develop varieties specifically for Michigan conditions.

Here are a few new varieties that have looked particularly promising:

CELERY

Green Light

This attractive celery with upright growth and thick stalks has caused favorable comment in Michigan. Although shorter than the popular Utah 52-70, it has good length and a fine "crated" appearance.

SWEET CORN

Gold Crest

This high yielding, first-early variety probably will not replace North Star, but it certainly is worthy of further trial. Maturity is similar to North Star. Ear size appears smaller because the husks are thinner and tighter to the ear. Liberal supplies of nitrogen are necessary for full development of ear leaves.

Victory Chief

Here is a main crop variety similar in yield and appearance to Victory Golden. In Michigan trials it showed promise as a replacement for the less tender Golden Security.

MUSKMELON

Spartan Rock

Many growers have been impressed with this new fusarium wilt-resistant Honey Rock developed by MSU. Although fruits are smaller the flesh is thicker and more solid, with a deep orange color. Maturity is seven to 10 days ahead of regular Honey Rock.

Harvest Queen

This high quality melon has become popular with growers and buyers in the last two years. Resistant to fusarium wilt and with a heavy net, it has rapidly replaced the more disease susceptible Honey Rock.

ONION

Epoch

In the search for a long storing, high yielding onion with uniform size and good color, the hybrid Epoch has been outstanding. While Trapp's strain of Downing's Yellow Globe remains the standard variety, Epoch's uniformity has brought particular comment.

Spartan

Here is another promising hybrid. It has an attractive dark skin and will hold up well for long storage periods. Spartan is early, maturing almost two weeks before Downing's Yellow Globe.

TOMATO

Fireball

Although this first early tomato has been on the market for only several years, it is a favorite among growers hitting the early home-grown market. Fruits are large, firm, and well colored. Vines are small and require plenty of moisture and fertilizer.

Moreton Hybrid

This variety is becoming more popular for the main crop in Michigan. It matures as early as Valiant but continues to bear large, well-colored fruit until frost. Fruits are occasionally soft, but Moreton Hybrid is still one of the best for our area.—John Carraw, Michigan State University.

FOR YOUR CONVENIENCE

When changing your address, or in any matter pertaining to your subscription, please send your address label from your last copy of AMERICAN VEGETABLE GROWER. Having the address label, together with the information it contains, enables us to give you quick, efficient service. Send your address label to: Betty Hindman, Subscription Department, AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

AMERICAN VEGETABLE GROWER

Success

TO

Alab
high

HIGH p
tomato
& Son veg
is the res
phases of

High Soil

Tomato
15 and 20
the Rutge
6 or 8 to
pounds of
acre and p
agricultur
every thr
maintain
point.

The Cu
per acre
ting it un
setting. L
or two si
pounds pe
The first
after setti
three weel
grow vigo
Plants a
in rows s
plant is st
to the sta

Spray and
Spraying
containing
soon after
Weekly spr
until plan
the Cutch
easier, qu
coverage.

Install Irr

In 1955
first exper
it paid we
had invest
275 feet d
motor, 600
pipe, 500
feet of 3-
20 sprink
toes they
peas, and

With th
can water
takes abo
settings a
apply an
1955 toma
week for
Harvest
continues
areas begi
no longer
grower.

MARCH, 195

Successful Program for TOMATOES

Alabama grower obtains
high yields, high quality

HIGH production of good-quality tomatoes on the C. C. Cutchens & Son vegetable farm, Dothan, Ala., is the result of emphasis on three phases of growing.

High Soil Fertility

Tomatoes are set between March 15 and 20, usually about 15 acres of the Rutgers variety. Before setting, 6 or 8 tons of manure plus 1000 pounds of basic slag are applied per acre and plowed under. In addition, agricultural limestone is applied every three to five years to help maintain soil pH near the neutral point.

The Cutchens apply 1000 pounds per acre of a 4-10-7 fertilizer, putting it under the row just before setting. Later tomatoes receive one or two side-dressings, each of 100 pounds per acre of sodium nitrate. The first is applied a week or so after setting and the second two or three weeks later as plants begin to grow vigorously.

Plants are set 15 to 20 inches apart in rows spaced 5 feet apart. Each plant is staked with two stems tied to the stake, others are pruned off.

Spray and Dust Program

Spraying with Bordeaux mixture containing 12.75% copper begins soon after plants are set in the field. Weekly spray applications are made until plants are of good size. Then the Cutchens switch to dusting for easier, quicker, and more thorough coverage.

Install Irrigation System

In 1955 the Cutchens had their first experience with irrigation, and it paid well that dry season. They had invested \$8000 in an 8-inch well 275 feet deep, a 700 gpm pump and motor, 600 feet of 6-inch aluminum pipe, 500 feet of 5-inch, and 1200 feet of 3-inch aluminum pipe, and 20 sprinklers. In addition to tomatoes they watered collards, turnips, peas, and beans.

With their system the Cutchens can water about 8 acres per day. It takes about 30 minutes to change settings and about two hours to apply an inch or so per setting. In 1955 tomatoes were watered once a week for five weeks.

Harvest begins about May 20 and continues until July 1, when other areas begin marketing and prices are no longer profitable for the southern grower.

THE END.

ELLIS AUTOMATIC TRANSPLANTERS

SINGLE and TWO-ROW

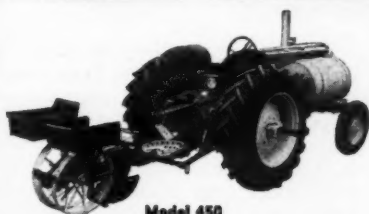
Noted for their unmatched accuracy and speed in carefully handling plants.

INCREASED YIELD

Many growers report substantial increase in yield as a result of the quick even start.

MOST COMPLETE LINE

Conventional Transplanters. Several Models of Tractor Mounted Single and Two Row Pull Type.



Model 450

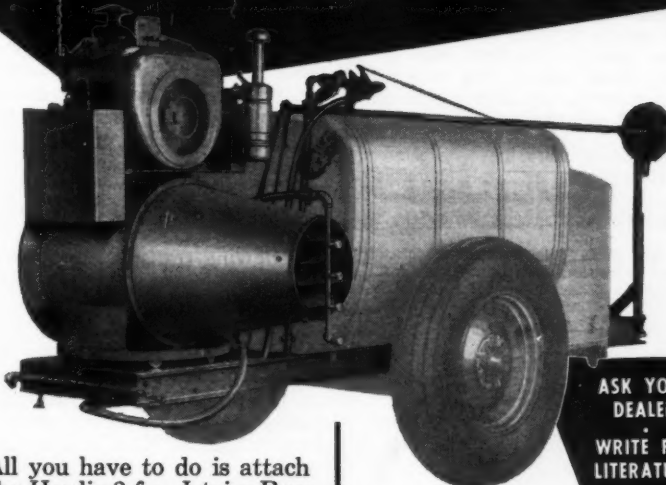
OTHER AUTOMATICS AVAILABLE
Model 400—Uses Rubber Tires. Also, Special Three and Four Row Pull Type.

For Literature
Write

D. R. ELLIS MFG. COMPANY

102 Railroad St., Verona, Wis.

NOW—YOU CAN MAKE YOUR OWN ROW CROP SPRAYER



ASK YOUR
DEALER
WRITE FOR
LITERATURE

- All you have to do is attach the Hardie 2-fan Jetaire Row Crop attachment to the frame of any sprayer. It comes complete with a heavy duty air cooled engine and controls.
- Covers 14 to 20 rows of potatoes, tomatoes, etc. with a controlled blanket of mist. Sprays 100 to 120 acres per day.
- High velocity air—15,000 cfm—from two, 26 inch axial flow fans puts the spray where you want it, regardless of wind.

- Air discharge opening rotates through 220 degrees, giving absolute direction control and complete coverage on any kind of ground. You can spray wherever crops can grow.
- Easy reach controls at tractor seat.
- Adjustable air outlet in discharge housing provides control of air on plants close to sprayer.



Our 60th Year
1898-1958

The Hardie Mfg. Company, Dept. AV
Hudson, Michigan

Please send me

☐ Jetaire literature. ☐ Have salesman call.

NAME _____

ADDRESS _____

CITY _____ STATE _____



TELLS YOU WHEN TO IRRIGATE...AND HOW MUCH!

- * SMALLEST in size! * LIGHTEST in weight!
- * HIGHEST in accuracy! * LOWEST in cost!
- * LONGEST on life!

An expensive irrigation system is of limited value unless you know when to turn it on and off. Eliminate guess work by using the Model BN-2 Bouyoucos Moisture Meter. Measure available moisture at root level. You'll get bigger and better crops and save money and time by eliminating unnecessary irrigation. Perfect for all types of crops.

Completely self-contained. Uses 4 inexpensive penlight batteries that last 2 years. No troublesome vacuum tubes or B batteries. BN-2 Meter complete with neck strap and batteries \$92.00

Gypsum Soil Blocks...impregnated with plastic for extra-life. Stainless-steel electrodes and 5 ft. leads. CEL-WWD.....each \$2.20

AND CHECK FERTILITY

solu bridge soil tester model rd-15

For laboratory testing of soil extract conductivity and particularly valuable for use by flower growers and in greenhouses. Simplest and easiest to use, RD-15 is an AC Wheatstone Bridge, line operated, "eye" tube used for null indicator. Calibrated 10-1000 mhos x 10⁻⁵. Manual temperature compensator 50-100°F. In gray wrinkle steel case, for 115V/50-60 cycle AC operation\$70.00

Conductivity CEL-S2 - sturdy molded polystyrene dip cell. \$16.75



Industrial Instruments Inc.

89 Commerce Road, Cedar Grove, Essex County, N. J.

SEEDLESS WATERMELON

(Continued from page 11)

The young seedlings need all the light they can get. The sash should be removed from the bed as much as possible during the day. No additional heat should be used unless it is necessary to prevent freezing. Air circulation over the bed is important. The beds should be watered only as necessary, and then in the middle of the day so the leaves can dry quickly. The seedlings should be sprayed or dusted for insect and disease control.

Transplanting

It takes from four to six weeks from seeding for plants to reach the proper size for transplanting. The plants should be sturdy with two or three true leaves. The field is furrowed out, cross-marked, and the plants are set at the cross-marks by hand or with a transplanter.

Extreme care must be exercised in handling the seedlings from the hotbed through setting so that the root "ball" is not broken. Poor survival will result if the roots are disturbed to any extent. The plant bands should be removed, unless they are especially treated to be left on, otherwise the rotting process will hamper the supply of nitrogen to the plant.

Following transplanting, the crop is handled exactly as any field of watermelons.

Seedless watermelons will not set fruit if planted by themselves. Interperse regular watermelons throughout the planting in the ratio of one normal plant to every four or five seedless plants. Use a normal-type melon having a fruit that differs from the seedless melon so they can be distinguished readily at harvest. Pollination is accomplished by insects, and it is often helpful in large plantings to place a few hives of bees at intervals throughout the field.

A few true seeds and other seed-like forms sometimes develop. In general, "seed" development seems

to occur more frequently in the earlier harvested melons. Most consumers have no objection to a melon that contains a few true seeds.

Hollow Heart

Hollow heart in seedless watermelons occurs with varying frequency. The ratings of several seedless varieties are given below.

Some varieties had very few cases of hollow heart and several varieties were rated 3.3 to 3.8, where a rating of 4 would have meant all solid fruits. Experienced growers can usually detect hollowness of any degree of severity by the hollow or "pumpkin" sound produced by thumping the melons, coupled with

Incidence of hollow-heart in seedless watermelons at Indiana Agricultural Experiment Station in 1955 and 1956

Variety	1955	Average rating Solid=4
Tri X 317	3.3
Tri X 357	3.1
Tri X 368	2.7
Tri X 315	3.8
Tri X 337	2.6
	1956	
Yammy	2.6
Tri X 317	3.6
Creomylon	3.3
Tri X 337	2.7
Tri X 332	2.2
S-11	3.2
Tri X 315	3.3
Fummi	3.7
Interkondo	2.7

extreme lightness of weight for the size of the fruit. Distinct lobing instead of roundness of the fruit also indicates the possibility of hollow heart, but often solid fruits are somewhat lobed.

By choosing good varieties and by careful grading, a grower can usually avoid cracked or hollow melons.

On the average, seedless watermelons tend to be slightly higher in sugar content than the seeded types. Certainly, the seedless melons can be expected to be as sweet as our best seeded types.

None of the seedless varieties presently available on the market



Varying degrees of hollow heart in seedless watermelon. Good varieties and careful grading eliminate the problem.

carries a...
ance. For...
certain of...
to fusari...
seeded typ...
varieties...
verely...
varieties...
erately-in...
eties show...
ately-infe...
resistant...
conditions

A few s...
grown tha...
different...
different...
able to the...
the seed...
remain in...
longer per...

Yields

Seedless...
pected to...
seeded typ...
In 1953, ...
located on...
severe an...
varieties...
range as t...
In 1956...
more heav...
the seedles...
because of...

Incidence of seedless water...

Seedless variety

Tri X 317

Tri X 357

Tri X 368

Tri X 315

Tri X 337

In 1957, v...
was again...
of the see...
Purdue Ha...
Gray, whic...
tible under...

Repeat...
melons hav...
dicating th...
can be dev...
run far ahe...
situation...
some time...

Are you loca...
Then you ma...
with a good...
An attractiv...
will help you...
ings for such...
from AMERIC...
loughby, Ohio

carries any known disease resistance. For some unexplained reason, certain of them show more tolerance to fusarium wilt than susceptible seeded type. In general, the seedless varieties show no survival on severely wilt-infested fields, some varieties show no survival on moderately-infested soils, and some varieties show good survival on moderately-infested soils yielding with the resistant seeded types under these conditions.

A few seedless varieties have been grown that have a flavor distinctly different from standard types. This different flavor is apparently traceable to the parents used in producing the seed. Seedless melons seem to remain in prime quality over a longer period of time.

Yields

Seedless watermelons can be expected to yield as well as our best seeded types if wilt is not a factor. In 1953, 1954, and 1955 trials were located on fields where wilt was not severe and most of the seedless varieties yielded within the same range as the seeded ones.

In 1956, the trial was on a field more heavily infested with wilt and the seedless types were reduced some because of plant loss and stunting.

Incidence of seeds and mature seed coats in seedless watermelons under test at Johnson, Ind., in 1955

Seedless variety	Date	Melons "seed" free Per cent
Tri X 317	July 27.....	0
	Aug. 12.....	88
	Aug. 30.....	90
Tri X 357	July 27.....	0
	Aug. 12.....	50
	Aug. 30.....	100
Tri X 348	July 27.....	36
	Aug. 12.....	85
	Aug. 30.....	73
Tri X 315	July 27.....	0
	Aug. 12.....	100
	Aug. 30.....	100
Tri X 337	July 27.....	0
	Aug. 12.....	0
	Aug. 30.....	83

In 1957, wilt was severe and this was again reflected in the low yields of the seedless varieties as well as Purdue Hawkesbury and Charleston Gray, which are somewhat susceptible under Indiana conditions.

Repeat sales on seedless watermelons have been almost 100%, indicating that an excellent market can be developed. The demand has run far ahead of the supply and this situation promises to prevail for some time to come.

THE END.

Are you located on a well-traveled highway? Then you may want to attract the motorist with a good-looking display of vegetables. An attractive, easy-to-build roadside stand will help you in your efforts. Working drawings for such a stand are available for \$2.00 from AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

Results Prove SEEDLESS WATERMELON SEEDS

DIRECT FROM JAPAN

BY Dr. Norio Kondo* FAMOUS PLANT BREEDER



INCREASE SEEDLESS MELON PRODUCTION AT LOWER COSTS!

- Give faster germination
- Bigger yields—Each acre is worth more to you
- Disease resistant
- Longer bearing season
- Solid, tastier fruit

A "MUST" FOR EVERY FRUIT GROWER!

*One of original Japanese developers of seedless watermelon seeds

Get better prices, bigger profits, larger watermelons by using INTERKONDO seeds. These seeds have been fully tested in the United States and found to confirm again the famous Japanese "green

thumb." Almost 100% repeat sales. Beat competition—be the first in your area.

Insist on INTERKONDO SEEDLESS WATERMELON SEEDS.

SEED DEALERS: A FEW CHOICE TERRITORIES STILL AVAILABLE. WRITE FOR PARTICULARS.

Sole Distributors

INTERCONTINENTAL INDUSTRIES, INC.
555 WEST ADAMS ST. CHICAGO 6, ILLINOIS

MORE AND BETTER POTATOES

Activo is Nature's own way of energizing soil for best crop yields with billions of friendly organisms, hormones, vitamins, minerals, BIOTIC. (Users report "Better than fertilizer!") Just apply to seed. More bigger, better potatoes or your money back. Trial pkg. for 9-18 bu., \$3.95 p.p.d. Dealers or THE ACTIVO COMPANY, Bridgeton 43, Ind.

GREENHOUSE PLANTS

Order cabbage, tomato, pepper, eggplant and cauliflower plants in flats.

Order Now

SCHMIDT BROS. GREENHOUSE

Maple View Farms, Route 3
Swanton, Ohio Telephone 3671

SEEDLESS WATERMELON

The Consumer's Choice of Melons

Hybrid **TRI-X** Seed

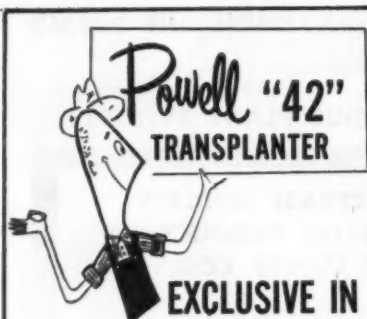
Highest Quality In Triploids

Secure Tri-x From Your Seed Dealer—or Write

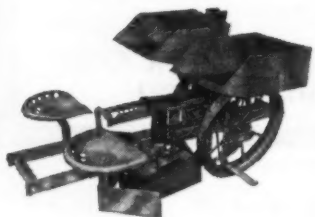
American Seedless Watermelon Seed Corp.

Goshen, Ind.

Pioneers in Triploid Culture in U.S.A.



**EXCLUSIVE IN
ITS CLASS WITH THESE
ADVANCED FEATURES**



THE POWELL PLANT PICK-UP SYSTEM:

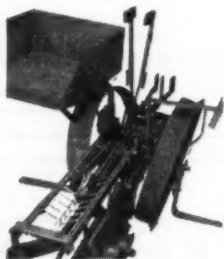
Plants are sorted by the operators into a wide pick-up tray from which they are gently taken by the PLANT HANDS and placed firmly in the soil.

THE POWELL PLANT WATERING SYSTEM:

Incorporating the new famous METER-RITE valve with the rubber dome and an easily adjustable timing disk which allows the exact amount of water to be placed in the proper relation to the plant, you get greater livability.

THE POWELL CAM ROLLER SYSTEM:

Equipped with case-hardened cam rollers, the "42" plant hands roll smoothly over rounded cam surfaces. Friction is greatly reduced thus eliminating drive wheel slippage and assuring very accurate plant spacing.



**ASSURING FAST PRECISION
TRANSPLANTING**

The Powell "42" assures you fast precision transplanting of tomatoes, cabbage, pepper, strawberries, tobacco, broccoli and many, many other plants.

**AVAILABLE IN SINGLE OR MULTIPLE
ROW UNITS FOR ALL TRACTORS**

Write for free complete literature
and the name of your nearest Dealer

Powell MFG. CO., Inc.
PHONE 7-1128 • P. O. DRAWER 5 • WILSON, N. C.

PLANT GROWING

(Continued from page 12)

the business a sound economic adventure. Choice of variety is important, and is generally based upon the degree of demand in the plant trade for a particular variety, plus those new varieties which possess certain advantages over older ones.

Another factor of major consideration is the choice of medium. Bettingers use a mixture of sand and peat; 40 to 50% peat and 50 to 60% sand. This mixture provides an excellent root growing medium as well as one which holds water well yet provides good drainage.

Automation

Perhaps the major factor in any plant growing operation is that of labor. The Bettingers make every effort to reduce the labor involved and to speed up certain phases whenever possible.

The media is handled whenever possible by dump truck and power scoops. Sterilizing is done with the least amount of handling of the media by steaming it right in a dump truck, then stored.

One machine mixes the sand and peat, then automatically fills the flats at the rate of 800 to 1000 per hour. The filled flats are loaded onto pallets, stored, and then taken to the transplanting rooms as needed by fork trucks.

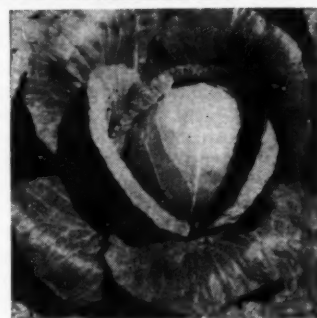
Here the first operation is to punch the holes and firm the media in each flat with a device built by the Bettingers. Ten women are employed to transplant seedlings to flats, running about 2000 to 2500 flats per day. Each flat holds 105 tomato plants or 96 plants of flowers, totaling around 200,000 plants transplanted per day.

Flats then must be moved from the transplanting room into either the plastic or the glass greenhouses. This ordinarily calls for a great deal of labor and time, plus hard work.

Bettingers, however, have eased this job and speeded it up with a flat-carrying device they developed. It is also used later when flats of plants must be moved from the greenhouses to hotbeds or cold frames. To date, they consider this piece of equipment one of the most important from the standpoint of saving labor, yet it costs so little to build.

The plant-growing structure is a costly item. This led the Bettingers to explore the use of plastic greenhouses, especially for growing seedlings and early plants. They discovered that plants in the plastic houses grew to be sturdier and stockier, with well developed root systems, than plants under glass.

THE END.



Greenback Y. R.

**What is Your
Special Crop?**

Cabbage—Beans—Tomatoes?

Whatever you grow

**Check Letherman's Catalog
for the leading varieties.**

Here are some Highlights

BEANS—Black Valentine Stringless, Seminole, Topcrop, Tenderlong and New Choctaw Wax.

BEETS—Excellent strain Detroit, Asgrow Wonder, New Ruby Queen.

CABBAGE—Bonanza, Badger Market, Greenback, Wisconsin Ballhead.

CARROTS—Gold Pak, Imperator, Nantes Strong Top.

SWEET CORN—Gold Crest, Seneca Dawn, Morning Sun, Sixtypak, Iochief.

CUCUMBERS—New Hybrids Ohio MR 200, Marketer, Niagara, Smoothie.

ENDIVE—Batavian Full Heart, Panchalier.

LETTUCE—Grand Rapids H5-4, Bibb, Cornell 456, leading Great Lakes strains.

MUSKMELON—Harvest Queen, Delicious 51.

ONION—Hybrids and Standard Varieties.

PEPPER—Yolo Wonder A, Hungarian Rainbow Wax.

RADISH—Cavalier, S. T. Globe, Comet.

SQUASH—Black Beauty, Royal Acorn, Butternut 23.

TOMATO—F₁ Hybrids, Stokescross F₁ Hyb. Sioux, Homestead 24, Queens.

**For a good seed investment
Send Today for**

New 1958 Catalog

Letherman's

Dept. VG, Canton 2, Ohio

**FERTO-POTS Millions Used
Plant Eats Pot**



Made with rich rotted COW MANURE. Start seeds, bulbs, plant in FERTO-POTS indoors. Transplant POT and all when ground is ready. No setback, grow two or three crops per year off the same ground.

(charges incl.) (prepaid) (charges incl.) (prepaid)
100 2 25 12.50 250 2 25 12.50
100 2 25 12.50 250 2 25 12.50
100 2 25 12.50 250 2 25 12.50

ALLEN COMPANY

Since 1915

Pittsboro 11, N.J.

AMERICAN VEGETABLE GROWER

(Con

its damage
putting up
minimize

Disease

rium, dam
corn mag
germinati
trol for fu
tion. For
is treated
using a
arasan or
chase of
portant.

Harvesti

of obtaini
harvesting
workers an
common in
ers 50 cen
leader 15 c
and hauling
Ferry, New
summer ra
cents and
keep them
better con

Some 20

chanical be
last year.
takes leav
specially-de
the beans a
This mean
once. Som
hand, then

Varieties
centage of
chanical ha
branched v
suitable in
Tendergreen
up to 90%.
cause plan
branch less.

as 3 tons p
small sieve

Yields of
scanned car
ings, stage
factors ma
Growers co
yield in favor

Breeders

well adapted
Bruising of
not serious,
tried out fo
Farm Resear
Expt. Sta., C
Spring 195
handled on a
ket beans go
of defective
tion fan take

Copies of Your
ing to Bill Liddle
Haven 2, Conn.

MARCH, 1958

SNAP BEANS

(Continued from page 15)

its damaging effect. Asgrow is now putting up seed in 50-pound bags to minimize rough handling.

Disease and Insect Pests.—Fusarium, damping-off fungi, and seed corn maggot cause much loss in germination of beans. The only control for fusarium is long term rotation. For the other problems, seed is treated often by the seedsman, using a mixture of lindane and arasan or similar materials. Purchase of disease-free seed is important.

Harvesting.—Cost and difficulty of obtaining picking crews make harvesting a problem. Migrant workers are often employed. It is common in the North to pay pickers 50 cents a bushel and a crew leader 15 cents extra for supervision and hauling to the plant. The King Ferry, New York, co-operative last summer raised these figures to 65 cents and 20 cents to get pickers, keep them contented, and exercise better control over the job.

Some 200 Chisholm-Ryder mechanical bean harvesters were used last year. This two-row machine takes leaves and stems between specially-designed rollers, pulling the beans and dropping the refuse. This means a field is picked but once. Some growers pick first by hand, then follow with the machine.

Varieties differ materially in percentage of recovery following mechanical harvesting. Short, many-branched varieties were found less suitable in trials at Geneva station. Tendergreen and its cousins do well, up to 90%. Close spacing helps because plants become taller and branch less. Yields have run as high as 3 tons per acre of medium and small sieve sizes.

Yields of snap beans should be scanned carefully. Number of pickings, stage of maturity, and other factors make great differences. Growers constantly sacrifice total yield in favor of low harvesting cost.

Breeders are working on strains well adapted for machine harvest. Bruising of pods for processing is not serious, but the method is being tried out for fresh market. (See *Farm Research*, Jan. 1957, N. Y. Expt. Sta., Geneva, and *Your Crops*, Spring 1957, Asgrow.) When handled on a large scale, fresh market beans go over a belt for removal of defective pods and refuse. A suction fan takes out leaves.

THE END.

Copies of *Your Crops* may be obtained by writing to Bill Liddell, Asgrow, P. O. Box 406, New Haven 2, Conn.

MARCH, 1958



**NEW!
HOWARD
ROTAVATOR
L28**

Operator can till close to growing crop thanks to Rotavator offset

The L28 Howard Rotavator is the only rotary tiller which mounts on I H Farmall Cub and Cub Lo-Boy tractors. Tillage width is 28 in., and the tiller is equipped with the world-famous Rotavator self sharpening bee-like blades. Positive depth control. Fast hitch, on-and-off in seconds. Ideal for seedbed preparation and cultivation of all vegetable crops.

Write at once for case histories, full details and name and address of your distributor:

**HOWARD
ROTAVATOR**

Arlington Heights 31, Illinois
Distributed throughout U.S.
and Canada

The Howard Rotavator Gem comes in tillage width of 20, 24 and 30 in., equipped with the new, fully tested, 14.9 hp Howard Twin engine (also available with mounting for Wisconsin A&N or TF engine). Three forward speeds, plus reverse. Fully enclosed transmission and drive. Positive, accurate depth control. The ideal machine for smaller acreages, performs all tillage jobs with professional finish.



Careful shielding and close-coupled design enables the Gem to till close to growing crops.

**GEM
THE
MACHINE
FOR THE
PROFESSIONAL**



FOR THE HIGHEST QUALITY
POTATO YIELDS, BE SURE THIS
OFFICIAL BLUE TAG OF CERTIFICATION
IS ON EVERY BAG OF SEED POTATOES
YOU PLANT!

MINNESOTA Certified
VIGOROUS
HEALTHY
SEED POTATOES

Grown from foundation or approved seed under rigid requirements and thoroughly inspected by well trained, qualified inspectors of the State of Minnesota Department of Agriculture. Carefully field inspected. Properly stored. Shipments inspected for grade by Federal and State inspectors.

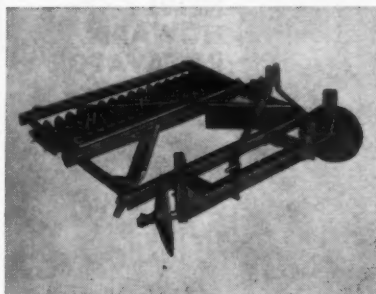
FLORIDA OR GREENHOUSE TESTED

FOR THE FINEST MINNESOTA CERTIFIED SEED
POTATOES CONTACT YOUR SHIPPER OR GROWER

FREE LIST OF GROWERS FOR YOUR SELECTION OF VARIETIES.
SEED POTATO CERTIFICATION, UNIV. OF MINNESOTA, ST. PAUL CAMPUS, ST. PAUL, MINN.

SEE YOUR
LOCAL DEALER
OR WRITE
DEPT. P
SEED POTATO CERTIFICATION, UNIV. OF MINNESOTA, ST. PAUL CAMPUS, ST. PAUL, MINN.

3 POINT VEGETABLE TOOLS



BEDFORMER

The Basic Tool for perfect Seed Bed.

- Gives uniform Depth for Roots
- Provides Aeration for Leafy Vegetables
- Leaves space for irrigation pipes
- Provides space for cultivation

- 3 POINT 3-4-5-6 ROW SEEDER
- 3 POINT WEED SPRAYERS

BRING YOUR SPRING OPERATION UP TO DATE

Write for prices and literature

LARCHMONT ENGINEERING

LEXINGTON 73, MASS.

Irrigation — Packing Houses — Special Equipment

LABELS for CRATES

BASKETS • HAMPERS • LUGS • CANS



BRANDAU CRAIG DICKERSON CO.
304-306 TENTH AVE. SO. NASHVILLE 3, TENNESSEE



Over 300 Varieties,
Types & Sizes.



Open Ring

RUBBER BANDS

for your fresh
VEGETABLES



SELL WITH COLOR

ALLIANCE RUBBER CO.
Alliance, Ohio

AVG-3

MR. _____

FIRM _____

ADDRESS _____

CITY _____

STATE _____

SEND FOR
FREE
SAMPLES

ALLIANCE RUBBER COMPANY

ALLIANCE, OHIO

FRANKLIN, KY.

HOT SPRINGS, ARK.

New for You

A Significant Advance

Vegetable growers are reporting increased yields as well as improved quality of produce and soil condition after using a new organic chemical known as Fertidyne. Technically described as Beta Amylose Triiodide, Fertidyne contains no nitrogen, phosphate, potash, or other elements which act directly on plants. Instead it acts upon the bacteria present in the soil. It acts on these bacteria like a hormone, stimulating them to increased activity. As a result of this activity, the Fertidyne manufacturer reports that particles of minerals, crop residues, and fertilizer residues in the soil are converted into forms which are readily available as nutrients to the plants. Fertidyne is not a substitute for fertilizer. Best results are obtained by spraying a dilute solution on the land and then harrowing it in thoroughly. The spray is applied before final tillage preparation of the seed bed. For more information, write Wallace L. Minto, Research Director, IBC Research Laboratories, Inc., 16 W. 61st St., New York 23, N.Y.



Pay As You Use

The above photograph shows the largest trailer load of polyethylene carrot and citrus bags ever trucked from New York to Texas—enough bags to pack 1.5 million pounds of oranges and 5 million pounds of carrots. All these bags were made from Visqueen "Q" film, and sold by Roto-Lith, Ltd. Roto-Lith has developed a "Pay as You Use Plan" for grower-shippers. This plan allows small packers to buy in large quantities, thus enabling them to compete with large shippers as to the cost of the bags. The beauty of the plan is that payment can be broken down into 20 weekly installments. For more information on this plan, write to Bud Cooper, Roto-Lith, Ltd., 30 W. 13th St., New York 11, N. Y.

AMERICAN VEGETABLE GROWER

u

...ing in-
...proved
...condition
...chemical
...ally de-
...iodide,
...n, phos-
...s which
...l it acts
...the soil.
...a hor-
...increased
...activity,
...reports
...op resi-
...the soil
...ich are
...to the
...ubstitute
...are ob-
...tion on
...g it in
...lied be-
...of the
...n, write
...irector,
...nc., 16
...Y.



...ows the
...ethelene
...trucked
...enough
...nds of
...of car-
...le from
...y Roto-
...veloped
...grower-
...ll pack-
...es, thus
...h large
...e bags.
...at pay-
...into 20
...e infor-
...to Bud
...V. 13th

GROWER



It's Worth

Last fall, I operated a new unit fits the Farmall C. It is ideal for control, turning, new L28 tractor qu tractor po will till a offset to tractor wh ing tilling you time Howard E. Davis,



USDA I

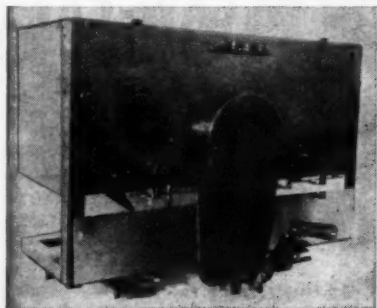
Anything usually a few years looking for which could lar insect tured about its ability dry mater of spread. justed from and the U 15 to 20 f terials. T used by t of Japan is made in all of the Skibbe, S Sodus, M

MARCH, 19



It's Wonderful

Last fall I saw a new rotary tiller operate on a vegetable farm. The unit fits the International Harvester Farmall Cub and Cub-Lo-Boy, and is ideal for seedbed preparation, weed control, turning-in cover crops. The new L28 Rotavator mounts on the tractor quickly and is powered by the tractor power take-off. The machine will till a 28-inch-wide swath, being offset to the right so that the right tractor wheel track is obliterated during tilling. This attachment will save you time and money. Why not write Howard Rotavator Co., Inc., 1600 E. Davis, Arlington Heights, Ill.



USDA Likes It

Anything the USDA approves is usually a good piece of equipment. A few years ago the Department was looking for a fertilizer spreader which could be used to apply granular insecticides. The spreader pictured above was selected because of its ability to calibrate accurately the dry material, and for the uniformity of spread. The spreader can be adjusted from 5 to 2000 pounds per acre, and the USDA reports spreads from 15 to 20 feet with 30 to 40 mesh materials. This new spreader is being used by the Department for control of Japanese beetles and fire ants. It is made in three models. You can get all of the facts by writing Harold Skibbe, Skibbe Manufacturing Co., Sodus, Mich.

MARCH, 1958

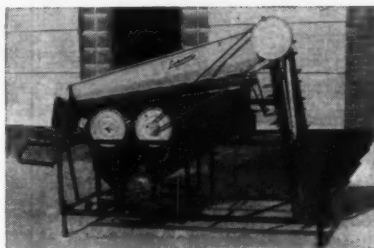


"LOCKWOOD" Seed Potato Cutters are best!

Lockwood's all new 1958 sizer-cutter is leading the potato cutter parade.

Headline features will bring greater potato profits for 1958.

- Fast-economical, up to 50 bags per hour with 3 men.
- No need to hire extra help during the spring rush.
- Seed pieces are accurately cut.



Model No. 6-SBC
(Not designed for long potatoes)

A Parade Leader in Price Too!!! \$909.50 motor incl. F.O.B. Gering, Nebr.

MANUFACTURING A COMPLETE LINE OF POTATO MACHINERY

LOCKWOOD GRADERS

(Home Office)
Gering, Nebr.

Factory Stocks at

Rupert, Idaho	Hereford, Texas	Gilcrest, Colo.	Tulelake, Calif.
Grand Park, N.D.	Monte Vista, Colo.	Antigo, Wisc.	
Quincy, Wash.	Hastings, Fla.	Six Lakes, Mich.	

SEE YOUR LOCKWOOD DEALER OR WRITE THE FACTORY:
Dept. AV-1, Bakersfield, California or at Presque Isle, Maine

GILL'S OREGON BALLHEAD CABBAGE



This main-crop, persistent heading winter cabbage is the most resistant to aphid and freeze injury. Outer leaves hold color long after cutting. See description in our Catalog. An outstanding commercial cabbage. Postpaid. Pkg. 15c; 1/2 oz. 45c; oz. 75c; 1/4 lb. \$1.75; lb. \$5.

SIEDEL BALLHEAD

Earlier than Oregon Ballhead, these solid, uniform heads weigh 3 to 4 lbs., with short stems. Popular with market gardeners. Valuable for crating where small solid cabbage is in demand. Postpaid. Pkt. 15c; 1/2 oz. 45c; oz. 75c; 1/4 lb. \$1.75; lb. \$5.50.

Send for our FREE Catalog

GILL BROS. SEED CO.
Dept. AVG, Montavilla Station • Portland 16, Ore.

AUTOMATIC GREENHOUSE VENT AND HEAT CONTROL



The Ventender System gives you all these features . . . and more:

1. Installed to present vent system with local or remote control.
2. Trouble-free operation under all greenhouse conditions.
3. Complete control for temperature, light, humidity, wind and rain. Available individually or combined.

Write today for information.

THE
VENTENDER
SYSTEM

28 Pleasant St. • Chagrin Falls, Ohio

FERTI-LIQUID

Trade Mark Reg.

Patent Pending

The All-Purpose Liquid Fertilizer
Complete with Penetrating Agent —
Trace Elements — Growth Stimulant

**New, Advanced
10-20-10 Formula—
40% Nutrients**

**Produces TOP QUALITY vegetable
—BIGGER, BETTER-TASTING**

- Gets it to market sooner
- BIGGER YIELD per acre
- Non-corrosive — use safely with any type spray (tractor, jet, boom or aerial) . . . ties in with insecticidal, fungicidal, herbicidal spray programs for low cost application
- No mixing, dust or odor!

\$2.50 per gal. in 55-gal. drums delivered

Write for complete details

CLOVER CHEMICAL CO.

P.O. Box 10865 Pittsburgh 36, Pa.

AMERICA'S MOST USEFUL



- PORTABLE
- NYLON-ROLLER BALL BEARING PUMP
- SPRAYS DIRECT FROM CONTAINER
- YOUR BEST VALUE AT THE BEST PRICE

Save time and money with New Power Aerosprayer. Its one-man portability lets you do a quicker spraying job. Ideal for trees, gardens, and cattle. Operates from ground, truck, or any solid base. Satisfaction guaranteed.



THE ORIGINAL AEROSPRAYER
Spraying made easy with an Aerosprayer, still the finest slide sprayer on the market.

Attach This Order to Letter or Card with Name and Address

— Send me an Aerosprayer (\$8.40 east of Denver, \$8.75 west, p.p.d. or C. O. D. plus charges).

— Send me Power Aerosprayer (\$133.95 complete with 1 1/4 h. p. Briggs & Stratton engine, F. O. B. Neodesha, Kansas).

— Send me additional information on Aerosprayer. — Power Aerosprayer — and name of dealer.

AEROSPRAYER COMPANY

DEPT. V

NEODESHA, KANSAS

56

PLASTIC MULCH

(Continued from page 16)

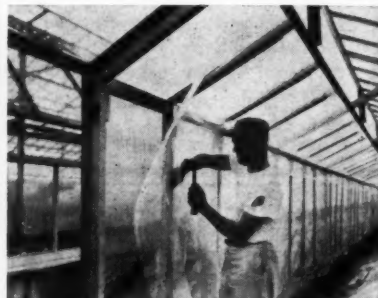
than from uncovered soil. Irrigation increased the benefits from mulching with both tomatoes and melons, which was unexpected because mulching reduces moisture loss from the surface soil.

Two important related benefits from the use of black plastic should be evaluated by the grower who contemplates spending \$150 to \$200 an acre for film.

Mulching with black plastic prevents weed growth without disturbing, injuring, or destroying the foliage or the plant's roots in the surface soil. Mulching eliminates most of the hand hoeing and close cultivation in such crops as melons, cucumbers, tomatoes, and peppers.

This saving in labor is largely offset by the labor of laying the mulch and the work of planting through it.

Under mulch the surface soil is quite loose but moist, favoring extensive root development. Without



It took 150 man-hours to build this 8x120-foot plastic greenhouse at Mill Road Greenhouses, Wantagh, Long Island, N.Y. Total cost of labor and materials amounted to \$500—although a handyman could reduce this cost considerably by doing it himself. The frame was constructed of 2x4-inch and smaller wood members, and 3,000 square feet of .002 inch polyethylene film tacked to it with a wooden lath. Inner layer of film is .0015 inch thick. The double layer of film, with its insulating dead-air space between, lowered heating costs to about half that required for a glass house. Plastic greenhouse plans are available from AMERICAN VEGETABLE GROWER, Willoughby, Ohio, for 50 cents.

mulch, the soil in the top 2 inches is generally too dry to encourage extensive rooting. The use of plastic mulch may be quite important on soil of poor physical structure or in seasons of heavy compacting rains or extended periods of drought.

Affects Growth

With warm season crops—peppers, tomatoes, okra, melons, and cucumbers—an increase in temperature of a few degrees in the surface soil may have a marked effect on growth and earliness. Mulching will generally result in an increase in temperature, over uncovered soil, of from 3° to 6° F., to a depth of 2 to 4 inches. Tomatoes, melons, and cucumbers will be cleaner when grown on mulch. In

DEPENDABLE, SAFE, LOW COST PLASTIC GREENHOUSE HEATERS

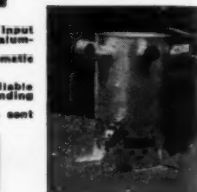


LP or Natural Gas

55,000 or 33,000 BTU input
Rugged construction (aluminum
in steel) (no rust)
100% safety pilot-automatic
control
Directional heat flow
Blower attachment available
Being used with outstanding
results
Free greenhouse plans sent
on request



Blower Attachment



WRITE

BURLEY BURNER CO., Inc.
2417 Nicholasville Pike Lexington, Ky.

WALTHAM 29 BROCCOLI SEED ORIGINATORS STRAIN

From our original foundation seed carefully propagated annually, we offer what we believe to be the best strain of Waltham 29 to be found.

Used extensively in Northeast, Northwest, Middle Atlantic and Southwest.

Send for free descriptive pamphlet

VEG ACRE FARMS

Cape Cod Forestdale, Mass.

CAW-CAW

**Firecracker
FUSE ROPE**

Keeps crop-destroyers on the run. Low cost! Write for samples and details.

**Quality RUBBER BANDS
TWINES and TWIST-EMS**

J. E. Fricke CO.

40 N. Front St., Phila. 6, Pa. • MILLS: Hulmeville, Pa.

ROBSON

**Seneca Sweet
Corn Hybrids**

Known Nation-wide for high quality and yield.

Direct from the originator to you.
Write today for Free 1958 Catalog.

**ROBSON
QUALITY SEEDS, Inc.**

Box AQ-A,
Hall, N. Y.

AMERICAN VEGETABLE GROWER

For the
every veg
with 100-
unique pu
weed spr
Pressure
ments. E
you can
with you
refill, no
it on and

PAK-TANK
PAK-T
Winner Pist

Rear's also
all above
RE
755 River



SPRAY Low-Ca
Excellent! Crea
against Deer, Al
chick, Sheep, Sk
in some cases.
Odor not offe
BUY NOW! Lo
Store College Labo
PRODUCT OF STA

Books on ve
may be ord
partment,
Willoughby,



BE
OAK

SPARTAN
SPRAY

Reliable all-
high pressur
ble sprayer. 7
sizes—15 an
Powered by
B & S engine
pump at 300
pressure.



Model
2150

See your BEAN
Dealer for A
Spraying and

WRITE TO
Sprayer an

OAKE
Box 181

MARCH, 1958

OST
TERS

Gas

on, Ky.

SEED
N

n seed
ly, we
ne best
found.
theast,
c and

plet

le, Mass.

AW

et
PE
yers on
Write
details.

BANDS
ST-EMS

neville, Pa.

et
ls

quality

to you.
atalog.

Inc.

GROWER



For the first time a High-Pressure sprayer that every vegetable grower can afford. Heavy steel tank with 100-gal. capacity, husky mechanical agitator, unique pump mount that permits the use of your weed sprayer or our new Wanner 500 psi pump, Hi-Pressure Hoses, flexible drive line, row crop attachments. Everything you ever wanted in a sprayer and you can carry it on your three point hitch. Take it with you wherever the tractor goes. No tracked up fields, no crops smashed into the ground. Just pin it on and do your job.

PAK-TANK only \$125.00

PAK-TANK complete with Wanner Hi-Pressure pump \$285.00

PAK-TANK with Pump and Row crop boom \$365.00

Wanner Piston Pump only—12 gal. per min. capacity, 500 p.s.i. \$125.00

Rear's also manufacture Trailer Model Pull-Tank with all above features—200 and 300 gal. capacity.

REAR'S FARM SERVICE

755 River Ave. Eugene, Oregon

PROTECT YOUR CROPS

MAGIC CIRCLE DEER REPELLENT

SPRAY Low-Cost Magic Circle Repellent. Creates barricade against Deer, Also Beavers, Woodchucks, Sheep, Skunks and Raccoons in some cases. Color not offensive to humans. **BUY NOW!** Locally, or order direct from State College Laboratories, State College, Pa. PRODUCT OF STATE COLLEGE LABORATORIES • P.O. Box 492, State College, Pa.

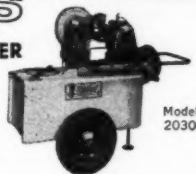
Books on vegetable growing and allied subjects may be ordered through Readers' Service Department, **AMERICAN VEGETABLE GROWER**, Willoughby, Ohio. Enclose check or money order.



BEAN OAKES **SPRAYERS and DUSTERS**

SPARTAN POWER SPRAYER

Reliable all-purpose high pressure portable sprayer. Two tank sizes—15 and 30 gal. Powered by 1½ h.p. B & S engine. 3 GPM pump at 300 pounds pressure.



CYCLO-JUNIOR CRANK DUSTER

Built for years of profitable service—powerful blower develops air blast that diffuses dust in even, effective coverage. Spiral agitator, positive uniform feed, 9 lb. hopper cap., 2-row attachment available.

See your **BEAN-OAKES** Dealer for All Your Spraying and Dusting Equipment.

WRITE TODAY—for FREE Sprayer and Duster Catalog.

OAKES MFG. CO. Box 181, TIPTON, IND.



addition, an increase in available nitrogen frequently occurs in soils covered with black plastic.

For laying any sizeable acreage with plastic, a tractor-mounted mechanical applicator that will unroll, apply, stretch and tuck the film into the soil at the edges is essential. Laying plastic by hand is laborious and a smoothly covered bed of well anchored film is almost impossible to accomplish.

Plants set on plastic are more easily injured by low temperature as heat is held in the soil by the mulch; consequently, crops cannot be safely field planted as early as on uncovered soil.

If care is taken, plastic mulch can remain on the field for at least two seasons. However, problems in economically eliminating crop residues, working up the soil between the mulched rows, applying additional fertilizer, and preventing soil-borne diseases from increasing must still be solved. The labor cost of salvaging and relaying plastic will generally equal new material. **THE END.**

USDA ACREAGE GUIDES

ACREAGE-MARKETING guides for 1958-crop summer and fall vegetables for fresh use, summer melons, sweetpotatoes, and vegetables for processing have been issued by the USDA. These reports will be available through state agricultural extension services at an early date.

Compared with 1957, reductions of 1% in total acreage for fresh summer vegetables, 4% for fresh fall vegetables, 2% for summer melons, and 5% for vegetables for commercial processing are recommended. The guide for sweetpotatoes is a total planted acreage equal to 1957.

THE PEAR VEGETABLE

A NEW fat-free vegetable, chayote, is coming into wider acceptance in the U. S.

The largest chayote farm and leading producer of this vegetable, discovered in the wilds of Mexico, is 74-year-old Arthur Dungey, who cultivates a 3-acre tract near Vista.

Chayote is about the size of a large pear, with a light green skin covering its slightly corrugated surface. This vine vegetable grows in a thick, leafy ceiling. The vines, which grow to about 75 feet long, are planted about 20 feet apart.

Chayote, called mirliton by the French, is also being recommended to Louisiana growers as a fall-maturing "squash" vegetable.—*William Rutledge, III.*

INCREASE POTATO PROFITS



- **Stop Bruising Potatoes!**
- **Stop Paying Extra Repairs!**
- **Stop Expensive Hand Picking!**

Length of Bed insures the picking of rocks only, and not top soil. Large Hopper—approximately 2 yds.—Rocks can be spread for building roads, or dumped over present rock piles. Large unloading door allows positive unloading operation even when tops are included with rocks. Three speed transmission for picking in all conditions. Friction clutch for machine protection.

Also available—Side delivery type Rock Picker with high boom for use with dump trucks or pull type rock carts. Same quality workmanship as Hopper type.

Write for details today!

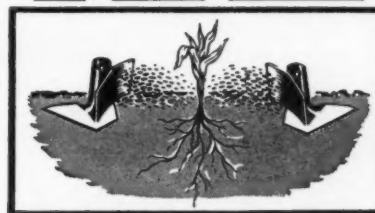
WASA POTATO HARVESTER CO.

MARS HILL

Phone 6611

MAINE

NEW LANTZ SWEEPS COVER WEEDS IN THE ROW



Eliminate root pruning and throw dirt where you want it

Ideal for both first and last cultivation. Patented sweep deflector on Lantz Row Sweeps throws dirt farther in a more uniform flow—even covers weeds and grass between hills in the rows. Faster cultivating speeds are possible because sweeps can be set farther from row—preventing root pruning. Fit all leading tractor cultivators. Adjust dirt control with simple twist of shank. Proven effective shallow cultivation for corn, soybeans and other row crops. Extra yield from one acre will more than pay for your Lantz Row Sweeps.

Send coupon for special field report folder.

***** LANTZ MANUFACTURING COMPANY, INC. *****

Dept. 1168

Valparaiso, Indiana

Please send me special field report folder and other illustrated literature on the sensational new Lantz Row Sweeps.

Name.....

Town and State.....

My favorite Farm Implement Dealer is.....

High Pressure SPRAY HOSE
Special value—shipped immediately



800 Lbs. Working Pressure
Horticultural hose is new, first-grade, flexible. Resists oils, chemicals, insecticides, any D.D.T. spray. Couplings attached to fit all High-Pressure Sprayers. Shipped C.O.D., plus freight—or postpaid, if payment sent with order. Satisfaction guaranteed—or your money refunded.

CHOICE OF LENGTHS	INSIDE DIAMETERS		
	3/4"	1/2"	3/8"
25 ft.	\$10.25	\$11.75	\$16.25
50 ft.	19.00	21.75	30.00
75 ft.	27.75	31.75	43.75
100 ft.	36.50	41.75	57.50

Agricultural Rubber Products Corp.
209 Washington St., New York, N. Y.

VEGETABLE GROWING OPPORTUNITY
Puerto Rico

Large area of fertile, flat land available at no cost, with ample supply of irrigation water for year-round production of vegetables. No frost in Puerto Rico. Plenty of labor experienced in Stateside methods of vegetable production. Local civilian and military markets always undersupplied. Good highways for truck transportation. If you are interested in backing a vegetable production enterprise with good profit potential, write for full details to

ARTHUR ISBIT
Christiansted Virgin Islands

SAWDUST MAKES GOOD FERTILIZER

You can apply 15 tons of sawdust per acre to build rich top-soil rapidly, and greatly increase nitrogen level. If you use the Activ-O process. Cheaper, more permanent, and better soil condition than with chemical fertilizer. No compost-heap making. Apply now; anytime. Rush postcard for free bulletin, "How to Turn Waste Into Gold."

THE ACTIVE PROCESS, Bridgeton 43, Ind.

ZON SCARECROW

Positive protection. Uses carbide or acetylene. No pilot. Retail \$59.50. (Dealerships available)



B. M. LAWRENCE & CO.
244 California St., San Francisco

Holmes SEEDS

**SWEET CORN
EARLY SUNRISE HYBRID**

NEW First Early—plant uniform, Each 8 inches long, 12 rows with well filled tips—Best for early market, Quality good.

5 lbs. \$3.50, 10 lbs. \$6.50,
25 lbs. or more \$.55 per pound.

Write for Market Gardeners and Florists' Wholesale Catalogue

Holmes Seed Co.
Canton 11, Ohio

OPPORTUNITY ADS

Only 25c a word for one-time insertion; 10c a word for two-time insertion; 15c a word for four-time insertion—CASH WITH ORDER. Count each initial and whole number as one word. Copy must be in first or month preceding date of issue. ADDRESS: AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

BANTAMS

WHITE WYANDOTTE BANTAMS—HATCHING eggs, baby chicks, breeders, game birds, waterfowl, incubators \$12.85. Circular. WILL SCHADT, Goshen, Indiana.

BEEES

BEEES INCREASE SEED AND FRUIT yields, require little attention. Big profits. Sting-proof equipment. Factory prices save 25%. Free advice from experienced bee men. Free catalog. WALTER T. KELLEY COMPANY, Dept. A, Clarkson, Kentucky.

BOOKS

THE HOW-TO BOOK ON STRAWBERRIES. 112 illustrated pages of down to earth strawberry know-how with complete charts on diseases, pests and their control. \$1.50. AMERICAN VEGETABLE GROWER, Box 107, Willoughby, Ohio.

BERRY BOOK: "THIRTY YEARS OF BERRIES." Raspberries and strawberries. 84 pages, price \$1.00 P.paid. ROY TURNER, 1525 S. Livingston St., Peoria, Ill.

TOMATO GROWERS—RECENTLY PUBLISHED 1957 American Tomato Yearbook. Cramped with important facts. Send \$2.00. Complete volume 1951-1957, \$8.00. AMERICAN TOMATO YEARBOOK, Box 540-A, Westfield, N.J.

BUSINESS OPPORTUNITIES

FREE PICTURE FOLDER: "HOW TO make \$3,000 Yearly, Sparetime, Raising Earthworms!" OAKHAVEN-25, Cedar Hill, Texas.

CASH FROM SAWDUST, TIN-CANS, NEWS, papers. Over 200 methods. Instructions \$1.00. CHARLES COMPANY, 12-XNT, Norwood, Ohio.

ELEPHANT GARLIC, 6 TIMES BIGGER. Sensational seller. Send \$1.00 for samples. Free information. NICHOLS GARDEN NURSERY, Norpac Hwy., Albany, Oregon.

FOR SALE—EQUIPMENT & SUPPLIES

SAVE up to 40% on—CHRYSLER INDUSTRIAL-IRRIGATION UNITS. Our own special irrigation unit costs only \$1695.00, and includes CHRYSLER'S big 354 cubic inch V8 engine plus all the accessories to make it run. 6 cylinder units as low as \$1295.00. Write for information. Dealer inquiries invited. Midwest Parts Corporation, Box 394, Gary, Indiana.

5-1 1/2" SINGLE AND 4-2" DOUBLE END March turnmotors, plus 1,000 nozzles and 100 hangers. J. R. MURRAY, 108 W. 9th, Apt. #3, The Dalles, Oregon.

TAWCO RADISH TOPPER, ALMOST NEW. Reasonable. CHARLES VERGIEN, Michael Road, Orchard Park, N. Y.

SENSATIONAL GARDEN TRACTOR. HOES between plants and rows, including strawberries. Eliminates hand hoeing. Nothing else like this. Patent 2742840. Also tills. Fantastic offer to first few inquiries. AUTO HOE, DePere 8, Wisconsin.

MODEL CM THERMO-KING UNIT FOR trailer or truck refrigeration. KAISER BROS., R. D. 1, Norwalk, Ohio. Phone Milan 9-2830.

STEEL MESH CONVEYOR 96 FT. LONG 36" wide; trash conveyor below; washer attached. Can be used to wash and pack corn, celery, etc. Ten yard steel trash hopper fed with slot conveyor. 3 Holland self-propelled transplanters, Allis-Chalmers Model G tractor with Ariens 2-row tillivator, John Bean model 20 TRP sprayer, 2-row "inrow" weeder, 12' 6-row dry fertilizer side dresser. All excellent condition. LEACH FARMS, Berlin, Wisconsin.

OPPORTUNITY ADS

BUY, SELL AND TRADE—Readers and business firms will get top advertising value at low cost from AMERICAN VEGETABLE GROWER "Opportunity Ads." RATES—25c per word for one insertion; 20c per word per month for two insertions; 15c per word per month for four insertions or more. Count each initial or whole number as one word. CASH WITH ORDER.

AMERICAN VEGETABLE GROWER reserves the right to reject or alter any copy which does not merit its standards.

New and remanufactured **INTERNATIONAL HARVESTER ENGINES AND POWER UNITS.** Special spring clearance sale. Midwest Industrial Company, 835 No. Capitol, Indianapolis, Indiana.

IRRIGATION PUMPING UNITS—OF ALL kinds. Self priming pumps, sprayer pumps, filter pumps, orchard sprayers. Write me your needs and save money. JIM HADDAN, P. O. Box 808, Battle Creek, Michigan.

INVENTIONS WANTED

INVENTORS—DON'T SELL YOUR INVEN- tion patented or unpatented until you receive our offer. Write COWGILL, Box 298, Marion, Ohio.

ARE YOU INTERESTED IN OFFERS FROM reliable manufacturers for your invention? Patented, unpatented. HARVEY ASSOCIATES, Dept. 8A, Cambridge, Maryland.

MISCELLANEOUS

FOURMONE COMPOST ACTIVATOR TURNS garden wastes, manures, sawdust, etc., into compost. Easy and safe to use. 1/4 lb. (treats approximately 8 tons garden wastes) \$1.25; 1/2 lb. \$2.25; 1 lb. \$3.95; 5 lb. \$15.00 postpaid. Also 20 and 100 lbs. at special low prices. Free literature from FOREIGN PRODUCTS CORP., 21 Washington St., West Orange, N.J.

MAILING LISTS—200,000 CAREFULLY selected names in the Agricultural Field. Individual lists of Potato Growers, Tomato Growers, Corn Growers, Cannery Shippers, Dealers and many other categories. Ideal for firms wishing to contact leading growers and dealers. For free brochure, write MACFARLAND COMPANY, Box 142-A, 8 Elm Street, Westfield, N. J.

SUBSCRIBE TO GOVERNMENT SURPLUS Weekly, lists all sales. Buy Jeeps, tractors, etc., direct from government. Next 10 issues \$2.00. GOVERNMENT SURPLUS, Paxton, Ill.

NOW LEASING 5 AND 10 ACRE TRACTS to staked tomato growers for 1958-59 season. Write now. LAND MANAGEMENT BUREAU, Boynton Beach, Fla.

WHY HAVE GREY HAIR? GUARANTEED liquid restores former color in days. Six months supply \$2.00 postpaid. FREDRICKS, 114 N. 6th Street, Allentown, Penn.

OF INTEREST TO WOMEN

QUILTING? REMNANTS? SILKS, COT- tons, velvets, nylon. 25c yard. Postpaid RAINBOW, Estill Springs 10, Tenn.

SEND US RAW WOOL FOR BLANKETS. Details free. WEST TEXAS WOOLEN MILLS, 439 Main, Eldorado, Texas.

PLANTS & SEEDS

APPLE, APRICOT, BERRIES, FIG, GRAPE, nuts, peach, plum, shrubs, shade, ornamentals. Catalog free. RIVERDALE NURSERIES, Riverdale, Georgia. Phone Fayetteville 5415.

FOR SALE: NEW CERTIFIED BLIGHT Resistant seed potatoes. Plymouth, Merrimac, Saco, Kennebec. Also Katahdin. Crop nearly booked. THOMPSON FARMS, Clymer 3, Clymer, New York.

STRAWBERRY PLANTS—ARKANSAS' FIN- est. Certified Blue Tag Blakemore and Florida 90, Green Tag Blakemore grown from University of Arkansas foundation stock. 20 other leading varieties. Write for free folder. UNVERRICHT & SCOTT, Box 337A, Augusta, Arkansas.

WRITE FOR FREE 1958 DESCRIPTIVE catalog on cabbage, tomato, pepper and other vegetable plants. DIXIE PLANT CO., Franklin, Virginia.

STRAWBERRIES—EXCITING NEW SPORT variety, bulbs, vegetable seeds, etc. Catalog free. SUNNYSIDE NURSERY, R. D. #2, Bangor, Pa.

STRAWBERRY PLANTS—ROBINSONS & Dunlaps. \$1.50 hundred, \$10.00 thousand. Cat-skills \$2.00 hundred, \$15.00 thousand. ZAWISTOWSKI NURSERY, Bath, Michigan.

GREAT NEW CANADIAN BERRIES. 1958 catalogue lists four. Also for sale with full U. S. distribution rights, black raspberry with very small seeds and very late strawberry. EDWARD LOWDEN, Ancaster, Ontario, Canada.

Are You a Seed Salesman?

Add to your income by selling **AMERICAN VEGETABLE GROWER.** Write today for our liberal, nursery agents' plan. Address:

EDWARD MEISTER, Circulation Manager
AMERICAN VEGETABLE GROWER
WILLOUGHBY, OHIO

TIONAL
UNITS.
Industrial
Indiana.
F ALL
ps, filter
ar needs
Box 808,

INVEN-
receive
Marion,

FROM
vention?
CIATES,

URNS
into com-
approx-
1/2 lb.
id. Also
ree liter-
RFP., 21

LY SE-
individual
rs, Corn
id. many
gbing to
For free
MPANY,
J.
RPLUS
ors, etc.,
ree \$2.00.
ill.

TRACTS
season.
UREAU,
UNTED
months
114 N.

COT-
RAIN-
NKETS,
MILLS,

GRAPE,
amentals,
S, River-

BLIGHT
Merrimac,
p nearly
3, Cly-

AS' FIN-
Florida
University
r leading
RRICHT

RIPTIVE
and other
Franklin,

SPORT
alog free,
Bangor,

SONS &
nd. Cat-
ZAWIS-

ES. 1958
full U. S.
with very
EDWARD

?
selling
ROW-
liberal,
s:
roger
WER

GROWER

Answering Your QUESTIONS

Don't let your questions go unanswered. Whether large or small, send them with a three-cent stamp for early reply to Questions Editor, AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

TRANSPLANTER WANTED

Can you send me the names of manufacturers of equipment for planting cabbage and tomato plants?—Minnesota.

Try John Deere, Moline, Ill.; Elco Products Co., West Allis, Wis.; D. R. Ellis Mfg. Co., Verona, Wis.; Griffin Tractor Co., Branford, Fla.; N. G. Hershey, Manheim, Pa.; Holland Transplanter Co., Holland, Mich.; Jackson Mfg. Co., Lebanon, Tenn.; Massey-Harris Div., Racine, Wis.; Mechanical Transplanter Co., 1150 S. Central Ave., Holland, Mich.; Paul S. Neal and Son, Lebanon, Tenn.; New Idea Farm Equipment Co., Coldwater, Ohio; Oliver Corp., 400 W. Madison St., Chicago 6, Ill.; Powell Mfg. Co., Inc., Wilson, N. C.; and Snyder Tank Corp., Lake Shore Rd., Buffalo, N. Y.

DOMINANT SEED WANTED

We are interested in the Dominant cauliflower variety described in the October State News Special Report under vegetable varieties for Texas. Where can we obtain seed for trial?—Texas.

The only source we can locate is L. Dauhnfeldt, Ltd., 75 Vestergade, Odense, Denmark.

GREENHOUSE TOMATO VARIETIES

What greenhouse tomato varieties do you recommend for this area?—Connecticut.

Most highly recommended are Waltham Forcing and Waltham Hybrid. Seeds are obtainable from Boston Market Gardener's Association, 240 Beaver St., Waltham 54, Mass.

GREENS PROBLEM

There is a disease that is spotting the leaves of my turnip greens, mustard, and collards. When the weather is favorable, it spreads over the entire field and makes the greens unfit to sell. What is causing the trouble and is there a fungicide that is safe to use?—Mississippi.

The disease sounds like pale spot and/or anthracnose. Both diseases are severe on early plantings but do not do much damage on late plantings when the weather is cooler, according to Dr. Woodrow W. Hare, plant pathologist at Mississippi Agricultural Experiment Station. Any good organic fungicide would be suitable to use but control is apt to be erratic unless spraying is done frequently.

A better control approach would be strict rotation and sanitation. The rotation should be at least three years and all refuse from a diseased crop should be destroyed.

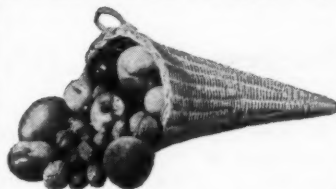
ASPARAGUS CULTIVATOR

I grow 29 acres of asparagus and would like to know what type and make of tractor I should get to cultivate my acreage. The rows are 6 1/2 feet wide.—Georgia.

Get an Allis Chalmers Model G. This small tractor can be reduced to a width of 36 inches or opened up to 64 inches wide. Use of this for cultivation, combined with proper chemical weed control, should be sufficient for maintenance of the planting.

Larger tractors might be used if they are modified to provide high clearance. Many of the growers in Florida and south Georgia are taking different makes of tractors and modifying them so as to be able to pass over staked tomatoes and sweet corn for spraying and dusting. At least one grower has done this with the Allis Chalmers G.

This Beautiful, Imported, Handwoven
"Horn of Plenty"
Yours for only \$1



Since ancient times the "Horn of Plenty" (or Cornucopia) has been the symbol of abundance and prosperity. But in addition to its symbolic value, this "Horn" also has many practical uses.

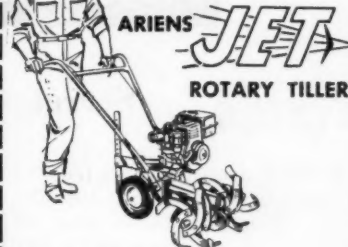
Brimming over with fruits, nuts and berries, it makes a magnificent centerpiece. Filled with rolls and biscuits, it's a truly different bread basket. Hanging on your wall, it's a colorful flower vase.

At this low price you'll want several . . . for yourself and for holiday gifts.

Quantities are limited. Order today.

American Vegetable Grower
Willoughby, Ohio

...FOR JUST EASY
TILLING USE



Other tillers may look like an Ariens Jet—but not one can equal it for engineering and trouble-free service! With free-swinging depth bar, fingertip controls, 8" to 20" tillage width, Ariens JET is made for Just Easy Tilling. 2 3/4 h.p. Briggs & Stratton engine; "Lo-Tone" muffler. Compare . . . and you'll choose the low-cost Ariens JET!

TILLERS FOR EVERY PURSE AND PURPOSE!

ARIENS YARDSTER — for home gardeners. 12" tillage. 2-speed wheel drive; all-season attachments.

ARIENS MULTIMATIC — for professional gardeners. 16" tillage. 2-speed, 2-direction operation with Insta-Hitch attachments.

ARIENS TRANS-A-MATIC — for heavy duty tilling. Two models: 20" or 28".



Write for free folder. Dealer inquiries invited.

Ariens 183 Calumet St.
Brillion, Wis.

NOW READY—FOR VEGETABLE GROWERS
1958 Spray Compatibility Chart!
and the Companion Spray Safety Chart



WHAT'LL IT MIX WITH?

Larger and completely revised for 1958. For economical and safe spraying, the compatibility of the various organic insecticides and fungicides is a must. AMERICAN VEGETABLE GROWER has again produced an ingenious spray compatibility chart which tells the grower at a glance just what chemicals will mix safely. Printed in 3 colors and mounted on Bristol board, it will guide you through the spraying season ahead. Also the important companion Spray Safety Chart which has been developed to help you in the safe, sure way to use these spray materials.

Order both charts—a 50c value—for only 40c. This offer good only in U.S.A. and Canada. Quantity prices on request. Coin or your check must accompany each order.

AMERICAN VEGETABLE GROWER
Willoughby, Ohio

Enclosed is money or my check. Send . . . compatibility charts and/or . . . companion spray safety charts to:

Name
Address
City State

Secrets of Success

AWHILE ago we asked a few of the growers in the concentrated Cleveland, Ohio, greenhouse area what "secrets" of operation had contributed to the success of their enterprise. Approaching the subject in a philosophical vein, Walter F. Pretzer, of Ruetenik Gardens, listed the following fundamentals which are as applicable to any vegetable or business enterprise as they are to the growing of greenhouse crops.

THE USE of the word "secret" is intended to appeal to the reader rather than reflect a revelation of hidden know-how of the writer. We are all attracted by the thought of secrets because we have an instinctive hunger for personal information, even though it may involve gossip.

Most of our own secrets have resulted from the experience, good and bad, of the people who preceded us in our farm's operation. This includes management and labor.

With 74 years of recorded daily experience for our reference, we have had access to basic know-how pertaining to our farm, its markets, and economic environment. This experience is a constant challenging incentive which could well be a secret of success.

It is common knowledge that a successful operation cannot be properly explained by naming the various factors in order of their importance. Several fundamentals may have equal importance. Here is our viewpoint:

1) The Golden Rule application to employees, with courage and steadfastness as the characteristics of management.

2) Instinctive respect for the natural elements, coupled with an unquenchable appetite for more understanding of the laws of nature.

3) A co-operative spirit, plus patience, humility, and love for the work.

4) Comprehension of the basic needs of plants.

5) Economic accessibility to consumer markets and labor supply.

6) Participation in the development of new understanding in the fields of production and marketing, together with unreserved sharing of know-how with others.

7) Sharing profits and responsibilities with associated labor.

8) Keeping daily records of pertinent items of management, such as labor use, seedlings, fertility, irrigation, marketing, and climate.

9) Good credit rating.

Evaluating these secrets, we select No. 4 as the hub. It represents a factor in know-how that is fundamental to understanding the other points and is a key to abundant living.

The most fascinating and profitable area of our work in the greenhouse is the care or husbandry of the soil and the control of the climate to meet the needs of whatever crop is under cultivation.

Faced with diminishing profits as a result of poor production in the early 1920's, we had a dramatic experience of changing an acre of top soil under glass for an acre of supposedly good top soil out-of-doors. Transfer was made by means of hand labor and the use of two one-horse dump carts. The impression of the experience has worn deep into our consciousness.

The results were equally impressive. The crops following the exchange were no better than before, either in or out-of-doors.

As a result of this scientifically-counseled action, we realized that we were at the bitter end of the rope in production on the farm unless some other know-how was developed. In desperation, we went back to the story of creation in the book of Genesis, which resulted in comprehending

our soil on a basis of the functional needs and experience of human life.

We gradually changed our entire soil husbandry program and balanced our scientific viewpoints with the application of human values to soil and plant needs. Elimination of the plow, reduction in the use of manures with increase in the use of minor elements, and much heavier and more frequent applications of the three basic elements in fertility have helped us keep pace with our general economy.

Through organization we have benefited in research, political equality, publicity, and public relations.

QUOTE-OF-THE-MONTH

Earth is here so kind, that just tickle her with a hoe and she laughs with a harvest.

—Douglas Jerrold

Not the least important tool that has aided in the development of our opportunities, along with the tractor, truck, chemicals, and automation, is the printed word of trade publications and the mutual understanding gained in state and national conventions.

Coming Next Month

- Gibberellic Acid—A Progress Report
- Frost Protection Methods—in the West, South, and East
- Precision Planting
- How Labor Racketeering Affects Growers
- 20 Steps to Successful Pepper Production
- How Gene Adams of Georgia Grows Sweetpotatoes

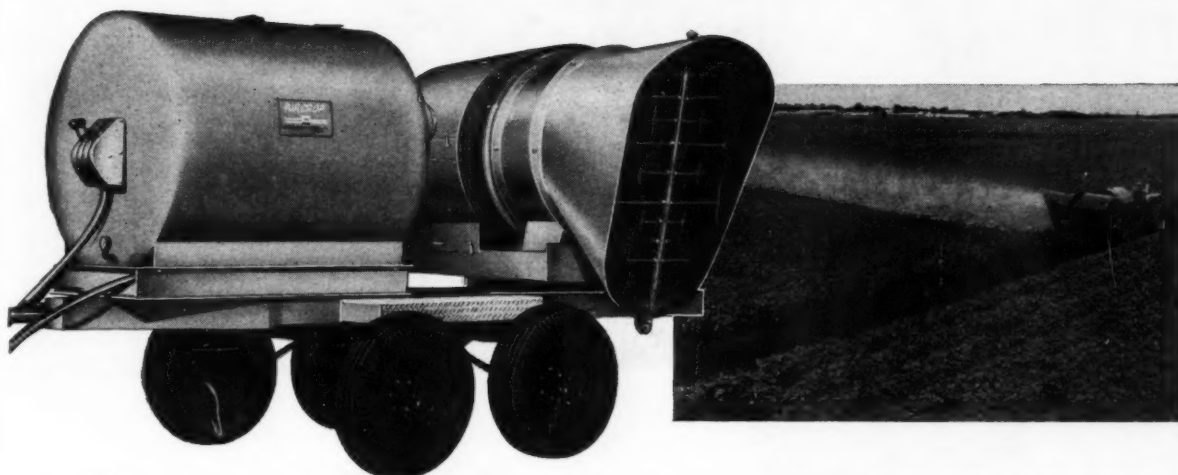


VGAA POST-CONVENTION TRIP

A bull fight in Mexico City . . . a tour of vegetable fields in the Rio Grande Valley, Texas. These were among highlights of a trip climaxing the annual convention of Vegetable Growers Association of America last December in New Orleans, La. Participating in the tour were 46 enthusiastic growers, some of whom are shown above at the pyramids near Mexico City.

Covers up to 250 Acres Per Day!

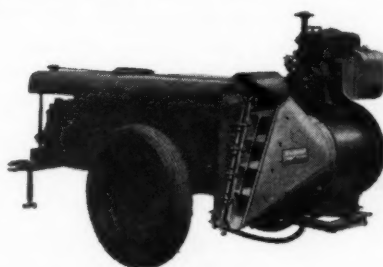
NEW *John* **BEAN** 40-RC Complete Row Crop Sprayer



Get top-rated performance and big air and tank capacities for large acreage spraying with John Bean's new 40-RC air crop sprayer. A complete spraying unit, the Model 40-RC sprays a 90 to 100 foot swath with thorough, even coverage throughout. You can spray dilute, semi-concentrate or concentrates up to 250 acres per day! John Bean's straight-through air delivery design and powerful 40-inch axial flow fan gives highest air volume at medium velocity for faster, "on time" spraying with fewer wheel rows through your crops. Simplified, easy-to-

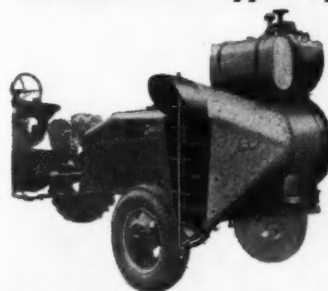
reach, hydraulic controls rotate the discharge head 210° to take full advantage of wind conditions. Movable deflectors for up and down air direction assure uniform spraying regardless of terrain. Compact control unit — right at the tractor driver's finger tips — allows positive adjustment of spray discharge and engine speed plus an instant check of operating instruments. Save time by fewer water hauling trips with the 40-RC's hydraulic jet-agitated, 500 gallon tank protected by exclusive "Bean Bond" coating.

John BEAN Aircrop attachments for modern air-type spraying



Model 8-RC
for medium acreage

Sprays swath from 30 to 40 feet wide at the rate of 9 to 12 per hour at 3 mph ground speed. Unit rotates 180° to meet all wind conditions. This versatile unit can be quickly converted for orchard spraying.



Model 15-RC
for medium to large acreage

Efficient, large-scale crop protection at low cost. Spray 50 to 60 foot swath at the rate of 20 to 24 acres per hour travelling at 4 mph ground speed. Hydraulic control rotates unit 200° to take advantage of wind direction.



Write TODAY for NEW
Row Crop Sprayer Catalog



Ask your John Bean Dealer for a Free Demonstration — Today!

John BEAN

LANSING 4, MICHIGAN
SAN JOSE, CALIFORNIA

Division of Food Machinery and Chemical Corporation



these
men
know
what
they're
doing

They are planting Asgrow Vigorpak Seed. They know its remarkable record for consistently uniform, rapid emergence, even when subjected to extremely adverse conditions of soil and weather. And the young seedlings show a degree of vigor not always found in ordinary seed.

This means that these growers will have fewer headaches when the plants are in the early stages of growth, whether in the greenhouse, plant bed, or open field.

The reason is that Asgrow Vigorpak Seed is produced under a special process developed by Asgrow to maintain seed vitality and vigor for months and even years longer than ordinary seed under average storage conditions.

Ask for Asgrow Vigorpak Seed when you order this season

AVAILABLE IN THESE SPECIES

Broccoli	Celery	Parsley
Brussels Sprouts	Cucumber	Pepper
Cabbage	Egg Plant	Tomato
Cauliflower	Onion	Watermelon

Asgrow

ASSOCIATED SEED GROWERS, INC.

Atlanta 2, Ga. • Albany, N.Y. • Chicago, Ill. • Cincinnati 25, Ohio • Dallas 2, Texas • Denver 2, Colo. • Detroit 2, Mich. • Kansas City 2, Mo. • Los Angeles 2, Calif. • Miami 2, Fla. • Minneapolis 2, Minn. • New York 2, N.Y. • Philadelphia 2, Pa. • St. Louis 2, Mo. • St. Paul 2, Minn. • Seattle 2, Wash. • Springfield 2, Ill. • Tampa 2, Fla. • Washington 2, D.C. • Wichita 2, Kan.

For more information, write to: ASGROW SEED CO., 2000 N. 1st St., St. Paul, Minn. 55109. Planting instructions and other information available from THE ASSOCIATED SEED GROWERS, INC., 1000 N. 1st St., St. Paul, Minn. 55109.

Progress
Gibbe

20 Step
in Gr

Problem
Racke

Growing
South